Available online at www.sciencedirect.com
ScienceDirect
Journal of Anthropological Archaeology 27 (2008) 131–147
JOURNAL OF Anthropological Archaeology
www.elsevier.com/locate/jaa

Maritime interregional interaction in Micronesia: Deciphering multi-group contacts and exchange systems through time

Scott M. Fitzpatrick *

Department of Sociology & Anthropology, North Carolina State University, Raleigh, NC 27695, USA

Received 21 March 2007; revision received 21 November 2007

Abstract

Recent theoretical perspectives focusing on interregional interaction can help explain the evolution of western Micronesian societies. Data from ethnohistoric accounts, oral traditions, and more recently, archaeological investigations, document the interactions between culturally and linguistically distinct island groups in the northwest tropical Pacific. Here, I look at the nature and emergence of these interaction networks between the islands of Yap and Palau in the Western Caroline Islands of Micronesia and the implications they had for transforming indigenous lifeways, exchange systems, and sociopolitics. In particular, I discuss a major facet of these interaction spheres—the Yapese quarrying of their famous stone "money" disks in the Palauan archipelago.

Keywords: Interregional interaction; Exchange systems; Yap; Palau; Coral atolls; Micronesia; Pacific Islands

Introduction

Initiating or maintaining contact with different islands served a number of functions for native groups in Oceania. The interaction between culturally and linguistically distinct societies often provided access to valuable or exotic resources (e.g., Weisler, 1990, 1993, 1998; Hunter-Anderson and Zan, 1996; White, 1996; Descantes, 1998; Fitzpatrick, 2003a; White et al., 2006), functioned as a means for gaining power and status (see various papers in Torrence and Clarke, 2000), allowed factions within individual islands to solidify their control over various aspects of life (Fitzpatrick, 2003a), and was sometimes necessary for long-term survival (Alkire, 1978).

Oral traditions, ethnohistorical accounts, and archaeological evidence indicate that culture contacts and interaction took place between various islands in western Micronesia prehistorically. These interactions were geographically and socially extensive and continued well after European contact. Not only did these interactions require traveling vast distances between islands, but communicating and negotiating for goods and services while continually maintaining good relationships.

In this paper, I discuss a major facet of these interaction spheres—the Yapese quarrying of their famous stone "money" disks in the Palauan archipelago (Figs. 1 and 2). The manufacturing of these disks involved Yap Islanders who traveled in canoes to Palau over 400 km away to carve large multi-ton limestone disks which were then transported back to their home island across treacherous reefs and seas. Stone money was incorporated into the Yap social system and used in a variety of exchange relationships for several hundred years and according to historical, ethnographical, and preliminary archaeological evidence, was active prior to the arrival of Europeans, but thrived after contact (Berg, 1992; Fitzpatrick, 2003a). Not only were these disks extremely valuable and status-oriented, but they were some of the heaviest objects ever moved over open ocean by native Pacific Islanders (some of which moved during the prehistoric period may have weighed up to two tons or so), a clear testament to the

* Fax: +1 919 513 0294.
E-mail address: scott_fitzpatrick@ncsu.edu

0278-4165/$ - see front matter © 2007 Elsevier Inc. All rights reserved.
doi:10.1016/j.jaa.2007.12.002

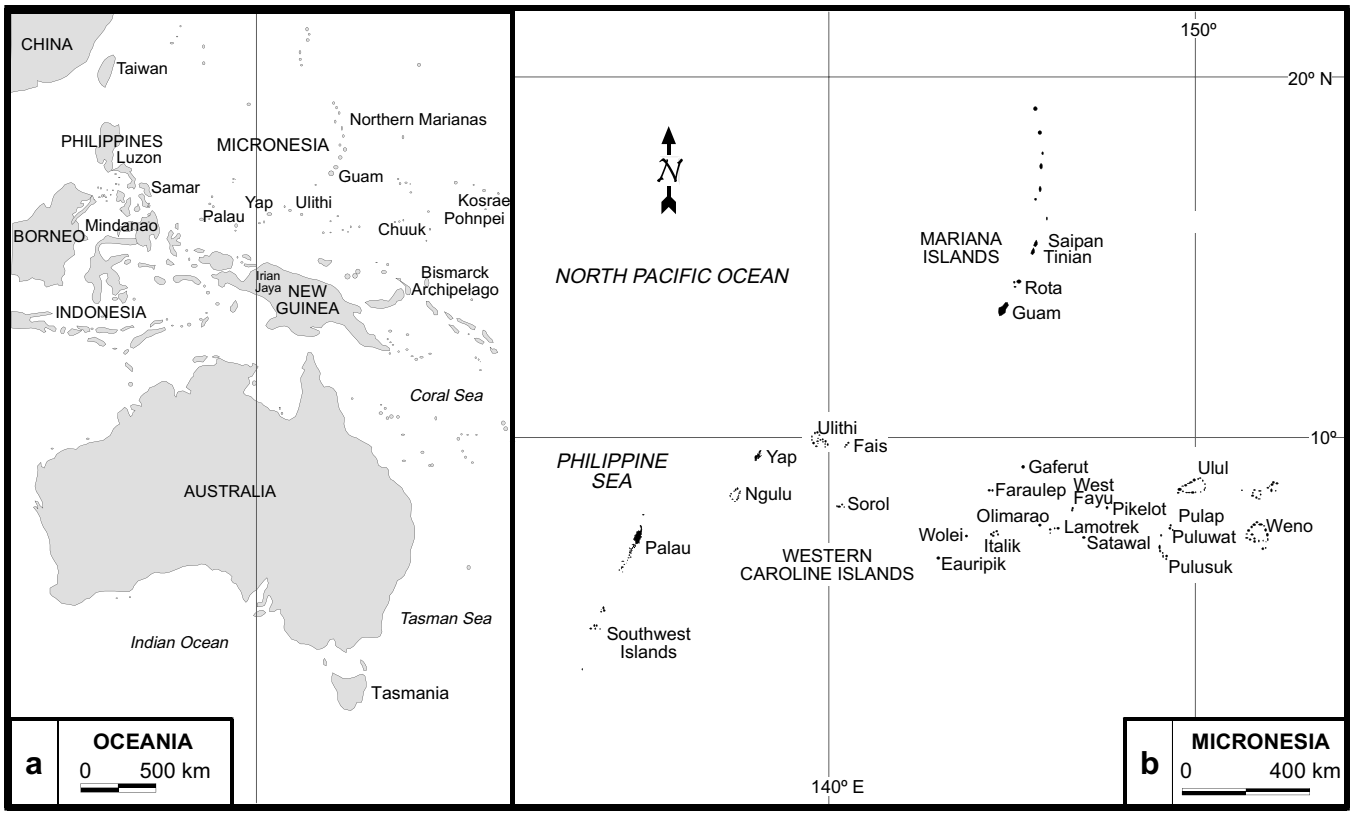

Fig. 1. Maps of Oceania (a) and western Micronesia (b).

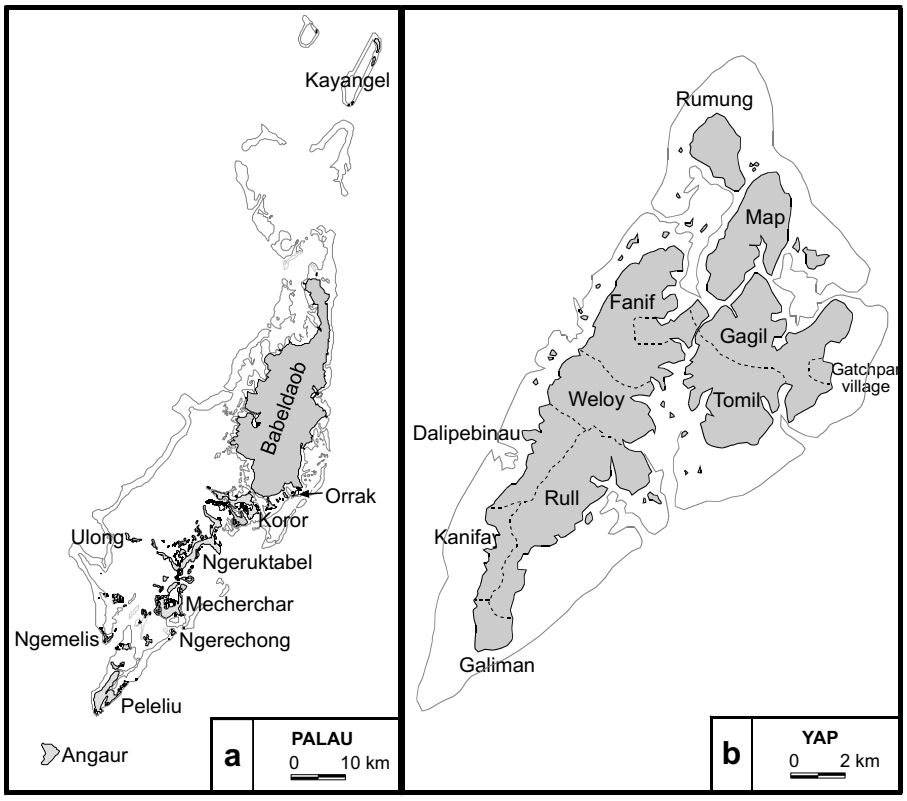

Fig. 2. Maps of Palau (a) and Yap (b).

islander's engineering, seafaring, and quarrying skills (Fitzpatrick, 2001, 2003a; Fitzpatrick and Diveley, 2004; Hazell and Fitzpatrick, 2006).[1]

Interregional interaction

In archaeology, the interaction of different groups on a regional scale, like that of Palau and Yap, has primarily been interpreted using unidirectional models (see Schortman and Urban, 1992b; Schortman, 1989; Stein, 2002), the most popular of which are the *world system* and the *acculturation* models. According to the world-system model (Wallerstein, 1974; Hopkins and Wallerstein, 1982; Hall and Chase-Dunn, 1993; Kardulias, 1999), the socioeconomic growth and development of societies, particularly complex chiefdoms and states, is a result of large-scale interregional exchange networks between competing polities that eventually expand to form 'cores' and 'peripheries.' Eventually, resources and power are concentrated within the core which becomes highly developed with craft specialization and political power, while peripheries provide many of the critical resources needed to sustain the whole. The core oversees the peripheries through colonial administration or by controlling weaker local leaders who are dependent on the core (Wallerstein, 1974; papers in Kardulias, 1999; Stein, 2002:904).

The world-systems model has three main assumptions: core dominance, core control over non-symmetrical exchange systems, and long-distance interaction between the core and peripheries which influences the political economy (Wallerstein, 1974; Hopkins and Wallerstein, 1982). However, as many social scientists have argued (Lane, 1976; Janowitz, 1977; Mintz, 1977; Schortman, 1989; Hall and Chase-Dunn, 1993; Stein, 1999), these assumptions do not fully account for the complex interactions that can occur and "eliminate or minimize the roles of polities or groups in the "periphery," local production and local exchange, local agency, and internal dynamics of developmental change" (Stein, 2002; 904–905).

The acculturation model was first developed as a concept to explain the control over indigenous peoples by Europeans in the Americas (Foster, 1960; Herskovits, 1937). In this model, smaller groups with less power and status become 'acculturated' into a larger society that controls them for the most part. This also assumes that the smaller group has a natural desire to become part of the larger whole. Acculturation occurs as the smaller group continually borrows discrete cultural traits from the more powerful donor culture and eventually becomes absorbed into the broader culture (e.g., Foster, 1960; Stein, 2002:905). In both the acculturation and world-system models, technology and information is absorbed by the smaller and more subservient group and the core or controlling power largely or exclusively dictates the flow and control over items of exchange.

Stein (2002; 905), Schortman (1989), and others (Schortman and Urban, 1992a) have discussed many of the flaws inherent in these concepts that limit their applicability to archaeologists. These include: (1) the idea that domination of the core states or donor cultures is absolute in terms of politics, economics, and ideology; (2) the prospect that there is a unidirectional flow of influence from the larger, controlling group to smaller, less powerful cultures; and (3) the view that peripheries or recipient cultures are passive agents that lack the ability to pursue their own goals and interests. Schortman (1989) and Stein (2002) have thus argued for a new paradigm to explain how and why culture contact and interregional interaction occurs and the evolution that takes place in the development of complex societies. This is important for examining exchange because archaeologists are becoming more aware of the idea that "the recursive relationship between social structure and the strategic actions of individuals or small groups plays a major role in reproducing and changing the social organization of complex societies" and that "gender and ethnicity [are] key dimensions of variation in complex societies" (Stein, 2002; 905; see also Conkey and Gero, 1997; Emberling, 1997). As a result, archaeologists can move away from world-systems, acculturation, and other models that apply to only a small number of cultural contact situations, and "incorporate a broad range of variation including long-distance trade, colonial situations, and military expansion" and focus on "the variables and processes that explain why the organization and effects of culture contact can be expected to vary under different structural conditions and historical contingencies" (Stein, 2002; 906).

Stein (2002; 907), for example, proposed seven essential elements for analyzing interregional interaction networks. These are: (1) a concern with both processual (e.g., replicable methodologies) and postprocessual (e.g., agency, practice, historical contingency) approaches; (2) a rejection of unilinear models; (3) a focus on multiscalar examination (i.e., "top-down" perspectives of the network and "bottom-up" perspectives of households and social groups); (4) a recognition of patterned variability in power relations that is affected by distance, level of technology, and degree of social complexity, among other factors; (5) the recognition that interacting complex societies are heterogeneous with different groups whose primary goals and interest are often in conflict; (6) the ability of internal dynamics (e.g., economic, political processes) to shape the network's organization; and (7) the principle that "human agency is as important as macroscale political economy in the organization of interregional interaction networks." In other words, this perspective does not treat less developed peripheral polities as "passive recipients of unidirectional influences from the core" (Stein, 2002; 907).

[1] There are numerous examples of stone money disks in Yap and Palau that are greater than 2 metric tons; some of these are 3–4 meters in diameter and weigh 7–9 metric tons. Hazell and Fitzpatrick (2006) estimated that it would have been extremely difficult for the Yapese to successfully transport stones larger than 2 metric tons using traditional watercraft. Disks exceeding this size were likely transported with the help of European technologies and ships (see also Fitzpatrick et al., 2006).

There are other assumptions in interregional interaction studies that are also critical elements to developing a model (Stein, 2002; 907–908): (1) ideologies, economics, political power, etc. are not evenly distributed—the ability of a polity to exert power in one arena does not mean it does so in another; (2) diagnostic artifacts do not necessarily indicate acculturation or hegemony; (3) class, gender, and ethnicity must be incorporated into the equation—traditional acculturation models stressed economic hegemony and "unidirectional emulation of 'core' prestige goods by indigenous elites"—culture contacts may involve symmetric interaction processes (e.g., alliance, ethnogenesis, cross-cultural marriage, and two-way movements of material culture); and (4) there are variations in how power is structured within and between participating polities (Stein, 2002; 908). This builds on the recognition by Schortman (1989; 56) that:

> Salient ties may exist on a local or supralocal level depending on the nature and spatial distributions of the crucial resources which encourage interpersonal interactions. These preeminent affiliations need not be restricted to a particular society...Changed conditions require novel strategies of interaction and a concomitant reshuffling of identities and their priorities to promote new interaction patterns (embedded references omitted).

The process of exchange between ethnically different groups has been explored by Cohen (1969) and others (e.g., Dryson, 1985; Lyons and Papadopoulos, 2002; Stein, 2002) in terms of "trade diasporas", whereby colonies are established for exchange purposes. This concept was originally intended to observe culturally distinct merchant groups who were socially independent (Stein, 2002; 908); this does not accurately describe the societal relationships that developed between Yapese quarry workers in Palau and chiefly elites in Yap. However, I believe the variations in power relationships that can develop between groups in a trade diaspora situation—*diaspora marginality* and *diaspora social autonomy*—can also be applied to stone money quarrying expeditions by the Yapese. For example, in *diaspora marginality*,

> [T]he rulers of the host community treat the trade diaspora as a marginal or pariah group to be exploited at will. The foreign enclave's presence is only tolerated because of its usefulness to the host community. The host community emphasizes the social separation of the diaspora group, defining the latter's autonomy more through restrictions than through rights (Stein, 2002; 908).

Could the reported use of Yapese corveé labor by Palauans, for example, be considered exploitive and were the Yapese socially separated when working in Palau? Or, was the situation represented by *diaspora social autonomy*, where there is a "negotiation of status in a situation where neither the host community nor the homeland is able to exercise full control over the diaspora" (Stein, 2002; 909). Regardless, how can we examine these processes archaeologically?

No one theory or model can fully explain the complex interactions occurring between the various island societies involved with stone money quarrying and Europeans who later became involved in this exchange system. But by utilizing some of the basic theoretical premises constructed through studies of interregional interaction (Torrence and Clarke, 2000; Schortman, 1989; Schortman and Urban, 1992; Stein, 2002), the mechanisms by which these distinct island groups came together and evolved culturally,

Fig. 3. Stone money disks in Yap found at Mangyol (photo by Scott M. Fitzpatrick).

Fig. 4. Stone money disk found in Palau at the Metuker ra Bisech site. The size (3.0 m in diameter, average thickness 0.4 m), shape, and quality of the disk, along with data from archaeological investigations, suggest that this specimen was carved using European technologies and transported on a larger ship (photo by Scott M. Fitzpatrick).

politically, and economically can be better understood. Using these frameworks, I find evidence that the interaction spheres operating in western Micronesia were dependent on mutual agreements between multiple groups, that technology transfer or exploitation was critical for maintaining the exchange networks, and that this may have led to sociopolitical changes within Yapese, Palauan, and possibly other Micronesian island societies through time.

Stone money and exchange in western Micronesia

The manufacturing of stone money by Yapese Islanders in western Micronesia is one of the most archaeologically dramatic, but least understood instances of "portable" artifact exchange in the Pacific (Fitzpatrick, 2003a). Stone money disks (also referred to as *rai* or *fei* in Yap and *balang* in Palau) up to 4.5 m in diameter and weighing as much as nine metric tons, were carved almost exclusively from natural limestone caves and rockshelters around the Palauan archipelago. The disks were then transported by ocean-going canoes and/or rafts, or European trading ships after contact (in the case of the largest stones), back to Yap Island almost 400 km away. What is most unusual perhaps is that this appears to be a one-way interaction as far as we know; there are little data to suggest that Palauans traveled to Yap to participate in exchange in any context.

A rich collection of ethnographic information and ethnohistorical accounts testifies to the importance of stone money in western Micronesian exchange relationships before and after European contact (Nero n.d.; Berg, 1992; Fitzpatrick, 2003a). Stone money, because it was produced from limestone (an exotic and rare resource, but available in sufficient quantity and quality in Palau) and required great effort and skill to manufacture and transport, was a commodity that grew in value and prestige over time (Figs. 3 and 4). Oral traditions and historical chroniclers report that the quarrying of stone money first took place prior to European contact and then continued in use thereafter, albeit with a transformation in the technologies and modes of transportation used (Berg, 1992; Fitzpatrick, 2003; Fitzpatrick et al., 2006) (Fig. 5).[2]

The production of these exotic valuables is also known from European explorers who participated in the transport of these disks back to Yap in the 1800s. According to Captain Andrew Cheyne (1852; 148):

> [Yapese money] consisted of nothing more or less than a round stone, with a hole in the centre, similar to a small upper mill-stone. The stones are very rare, and consequently highly prized, being only found in the mountains of the Pallou [Palau] Islands.

Oral history and ethnohistorical accounts report that the Yapese carved disks of stone inside limestone caves by splitting off rock slabs using fire and shell adzes. Le

[2] It should be noted that there are no definitive radiocarbon dates from stone money quarries investigated archaeologically in Palau thus far that predate European contact with islands in western Micronesia during the early 1500s. However, Yap was only visited sporadically through the next few centuries and the first sustained contact with Palau did not take place until 1783 (Hezel, 1983). One date from the Metuker ra Bisech site does predate contact with Palau (Fitzpatrick, 2002). It is quite possible that a more comprehensive survey of stone money quarries in the archipelago, away from the more populated centers of Koror and Babeldaob would reveal earlier evidence, although it is likely to be ephemeral and difficult to locate. Nonetheless, the fact that Europeans observed the quarrying and transportation of stone money suggests it was taking place prior to contact using traditional technologies.

Fig. 5. Yapese Islanders carrying a stone money disk (c. 1964; Gillilland 1975).

Hunte (1883:25), traveling on the HMS *Espiegle* as the British Judicial Commissioner, noted in his report that he found "no less than a hundred Yap natives at Pelew" (Palau) occupied in cutting these stones and preparing them for transport. They then drilled a hole in the center using a reef stone with a fire drill (de Beauclair, 1971; 188). The stone money was then moved by placing timbers through a hole in the center of the disk and transported back to Yap on rafts, canoes, or ships. "Many exceeded six feet in diameter and were proportionally thick, having a large hole in the centre through which a log of wood is passed and this when laid across two canoes is sufficient to support the stone in transit" (LeHunte, 1883:25).

Alfred Tetens (1958:12), an employee of the German trading company of Johann Caesar Godeffroy and trading partner of Andrew Cheyne, lived in Yap and describes the Yapese traveling to Palau and back to quarry stone money in 1862–1863.

> My friendship with Abba Thule (i.e., *Ibedul*, a title given to chiefs in Koror), was of the greatest importance to me; for although Yap is hostile to Palau, the people of Yap had to visit Palau for the preparation for the great stones which serve them as money, and for obtaining the consent of the king to carry them away.

Tetens (1958:12) also recorded in his journal in late 1865:

> There were also passengers on board the *Vesta*. These were ten natives of Yap who wished to return home with the big stones they had cut on Palau and which are used as money and are considered of great value. For small change large shells of mother-of-pearl are used. The large coins cut out of glistening white stone have the shape of a big Swiss cheese; in the middle is a hole as big as a fist through which the beam for carrying them is passed. Only a limited amount of this coinage may be made at one time, thus assuring a controlled financial system.

European involvement

In the mid-1800s, prior to the arrival of Alfred Tetens (Tetens and Kubary, 1887) and Andrew Cheyne, foreign ships began arriving to Palau and Yap more regularly, though few compared to the numbers that would come decades later (Hezel, 1983). Europeans were primarily concerned with making national claims to lands for colonial expansion and establishing trading posts to increase their wealth and influence. These continued efforts at expanding power throughout western Micronesia had a dramatic and lasting effect on traditional lifeways, including religious beliefs, mortuary practices, language, and education (Hezel, 1983).

During historic times, the prior methods of quarrying used by the Yapese were transformed through the use of metal tools and the transport of disks on foreign ships with the aid of traders. The most notable character involved in this trade was Captain David Dean O'Keefe, an Irish-American from Savannah, Georgia (see Klingman and Green, 1950 for a historical narrative of O'Keefe's life). O'Keefe made arrangements with several Yapese chiefs to haul laborers to Palau and stone money back to Yap in exchange for a set amount of copra according to the size of each disk measured in hand spans "which in Yap means the stretch of the index finger and thumb" (Einzig, 1966; 37). In 1872, the Yapese began traveling to Palau on O'Keefe's ship and it became a thriving business. He then sold his goods in the Far East, returning to Palau to fetch the stone money cargo and bring it back to Yap.

Historical records indicate that O'Keefe literally brought thousands of stone money pieces from Palau, and possibly Guam, which he then traded to the Yapese for copra. Other minor and short-lived players in this trade included Eduard Hernsheim and Crayton Holcomb who arrived in 1874 (Hezel, 1975, 1983; 268). By the late

1800s, Yap was inundated with stone money. The departure of O'Keefe and a ban on inter-island voyaging by German administrators at the turn of the 20th century essentially collapsed the lucrative transport of stone money between Palau and Yap that had been going on for centuries.

The evolution of this exchange system over time was a result of a number of outside influences, both Micronesian and foreign. With the incorporation of skilled navigators from the Outer Islands (coral atolls) east of Yap, interaction between Yap and Palau, and the introduction of European technologies, stone money was produced in greater quantities and larger sizes while falling in value. As a result, stone money appears to have been both an object of change and a catalyst for political transformations in Palau and Yap. Interaction between these groups was instigated and amplified, in part, because of the Yapese desire to acquire exotic limestone which existed in large quantities primarily in the Palauan archipelago. The relationships that developed were secured through various means, both social and material, and ultimately changed through time as a result of many factors, including contact with other peoples and technologies (e.g., Europeans) and chiefs needing to coalesce and expand their power.

Exchange systems in western Micronesia developed for many reasons as the rest of Oceania—as a way to offset resource deficiencies (Alkire, 1978), enhance prestige (Descantes, 1998), relieve pressure from natural disasters (Alkire, 1978; Descantes, 1998; 258), or create alliances, among others. Stone money quarrying developed for some of the same reasons. How can the exchange relationships and interactions within and between groups in western Micronesia, specifically in regards to stone money production, be explained? Were these asymmetrical relationships with dominating cores and a hierarchical power structure as would be expected in a world-systems model? As these interactions became more frequent and intensified, is there evidence for technological or sociopolitical transformations within each particular group?

When attempting to explain the reasons for stone money manufacture in Palau by Yapese Islanders and hence, the interaction that occurred between them and other groups, a variety of models and theoretical approaches have been explored. In discussions of Micronesian exchange systems, there has been a tendency to view the interactions that occurred between different groups from a world-systems or acculturation perspective, whereby resource deficiency and dominance of one group over another was prevalent (e.g., Alkire, 1978). But the quarrying of stone money and exchange mechanisms surrounding this process incorporated a number of different cultural groups (Palauans, Yapese, Outer Islanders, and Europeans), occurred before and after European contact, and involved the introduction of new technologies such as iron tools for quarrying (Fitzpatrick et al., 2006). Although exchange encounters can involve transactions which have functional or economic aspects, they "also carry strong social meanings, establish social relationships, or make statements about existing relationships in terms of relative status or the balance of social power" (McBryde, 2000; 243). This suggests that these interactions were symmetrical and mutually beneficial, not one-sided with a particular group exercising extreme dominance over another. It is clear that these relationships are more complex than previously thought and require a multi-directional model to analyze exchange behaviors.

The new paradigm of "interregional interaction" proposed by Stein (2002; 906) is a promising one for analyzing exchange and interaction in Micronesia. In this framework, states are "heterogeneous entities", recognizing that "interaction is organized not just by core states but by the actions of all the participants in the network" (Stein, 2002; 906; see also Schortman and Urban, 1992b). Using a sophisticated analysis that includes, among other elements, variable power relations of interacting polities, differential goals of heterogeneous entities, and human agency, Stein (2002) emphasizes the need to identify an approach for analyzing interregional interaction that recognizes " a range of variation in power relations between the polities interacting in an interregional exchange network" (Stein, 2002; 908).

The insights offered by multi-directional models of interaction are important and these "local-level cultural phenomena can only be understood within a broader and geographical frame of reference" (Stein, 2002; 903). Exploring the role that interregional interaction played over time may help to explain why stone money became so valuable and the socioeconomic precursors that led to its prominence in Yapese society.

Exchange between Yap and Palau (and the extension of these interactions with Outer Islanders and Europeans) appears to have developed as a means to enhance prestige in the competitive political environments of both island societies and maintain social (and probably kin) relationships. As I argue, these relationships were not asymmetrical, but bilateral and mutually beneficial and involved two-way movements of material goods, cross-cultural marriage, and alliance formation so that the Yapese could secure access to the limestone deposits in the Rock Islands of Palau. The theoretical framework of interregional interaction (Stein, 2002) helps to explain why stone money production began and the effects it had on various groups through time.

In examining stone money exchange from an interregional interaction perspective, we should expect to find differential exertion of power by each group (the ability of a group to exert power at one level does not necessarily mean it can do so in another), evidence of use of diagnostic artifacts (e.g., tools), and technological transformations which are not necessarily reflective of acculturation, economic heterogeneity (e.g., multiple movements of different goods, intermarriage), differences in faunal and/or artifact assemblages, and evidence for what Cohen, 1971; 266–267; Cohen, 2003; cf. Stein, 2002; 908–909) described as *trade diasporas*, or:

> Interregional exchange networks composed of spatially dispersed specialized merchant groups that are culturally distinct, organizationally cohesive, and socially independent from their host communities while maintaining a high level of economic and social ties with related communities who define themselves in terms of the same general cultural identity (Stein, 2002; 908).

I agree that exchange relations and interaction enhanced the prestige of elites (see Polanyi, 1965) and were often critical for maintaining political control and influence (Friedl, 1975; Helms, 1992; 157). But were the relationships that emerged within western Micronesian interaction spheres asymmetrical and exclusively dominated or centralized by merely one core elite, or are there a more plausible explanation?

Multi-ethnic encounters in Micronesia from the prehistoric to the historic period point to changes in stone money production that can only be effectively examined diachronically. Determining when certain changes affected different parts of this exchange system is difficult, however, because "prior to any written observations, many native societies were already responding to the widespread exchange of European goods, the rapid spread of alien plants and animals, and the assault of virulent epidemics" (Lightfoot, 1995; 200; see also Trigger, 1981; Crosby, 2004; Ramenofsky, 1987; Dunnell, 1991). New technologies introduced by Europeans, especially iron, clearly affected how stone money was quarried (Fitzpatrick et al. 2006), but how and when? The result of these and other multi-ethnic encounters over time probably stimulated cultural exchanges and the borrowing of material goods, architectural styles, subsistence strategies, diet, methods of craft production, dress, and ceremonial practices (Lightfoot, 1995; 201). Active agents in the exchange system included tools (e.g., adzes, chisels) for carving and moving stone money. How the technological expertise of Yapese Islanders was transformed during the period of stone money quarrying is an essential part of understanding how Europeans affected regional interaction spheres.

The Yapese quarrying of stone money in Palau is particularly well suited for examining interregional interaction because these contacts were occurring over long periods of time, across vast distances, and involved multiple groups. However, as Deagan (1990) and Lightfoot (1995) note, determining the extent and significance of interaction and multi-ethnic encounters diachronically is a challenge for archaeologists, both theoretically and methodologically (Deagan, 1990; Lightfoot, 1995:201; see also Schortman and Urban, 1992a,b). As I describe below, the interaction between Yap and Palau vis-à-vis stone money production appears to have had residual effects on other aspects of Palauan society.

Sociopolitical changes in Palau and Yap

One of the most impressive aspects of Palauan culture is the artificially constructed terraces and "crown and brim" features found on the volcanic islands, particularly Babeldaob (see Phear, 2007). Wickler (2002a,b) proposed that the development of Palau's monumental terrace complexes which began around AD 1 was agriculturally based, but multifunctional. After about AD 600, the construction of more monumental features appear to be linked in part to competition (see Wickler, 2002b). Liston and Tuggle (2006) suggest too that the terraces probably had multiple functions through time, such as dryland cultivation, habitation, ceremonial use, fortification, and burial grounds (see also Phear, 2007) that may have resulted from competing polities struggling for power. Terrace constructions appear to have ceased around AD 1000–1200 when stonework villages begin to emerge in the Rock Islands and Babeldaob (Masse, 1990). Liston and Tuggle (2006) have interpreted the terraces and stonework villages as being features of fortified polities which were defensive, but also symbols of power and prestige.

The earliest evidence for probable habitation at traditional village sites comes from Ngetcherong, Ngeredubech (Wickler, 2002a), and Ngeraus which date from approximately AD 1000–1250. In general, it appears that stonework structures such as *bai* platforms (communal men's houses), pathways, bathing structures, canoe houses, docks, and other related features were integral parts of traditional villages up through the historic period. Krämer (1917) recorded 235 villages in 1910, although at the time of the survey, 151 of them had been abandoned.

Around AD 1000–1200, traditional village construction began and was primarily focused along the coastal margins with easy access to irrigated taro fields. The terraces were abandoned, but no oral history describes their function. Most Palauans believe them to be natural features of the landscape or from historical warfare or mining operations. What caused these changes to emerge?

At the time of European contact, Palauan political units consisted of nucleated villages (concentrations of stonework features with associated taro fields and reef), districts/states referred to as *renged*: "tied together places" (villages in the same general vicinity), and confederations (temporarily organized associations of villages and/or districts) (Parmentier, 1987). According to Liston and Tuggle (2006), villages were situated along coastal areas obstructed by mangrove forest to discourage an attack from the sea. Various defensive fortifications (e.g., large platforms, massive stone walls, stone walls in mangrove channels) were also constructed to repel attackers (Keate, 1793; Liston and Tuggle, 2006). Liston and Tuggle (2006) suggested that population growth fueled agricultural expansion which increased village consolidation and competition. This is similar to what Labby, 1976; 120–121 argued for Yap in which intensified taro production allowed men to consolidate their power locally and encourage alliance formation, thereby leading to an increase in territorial conflicts and probably resulted in increased warfare and the need to more accurately define and protect boundaries.

Archaeological investigation indicates a move away from the building of large-scale terrace formations to more densely organized stonework villages (Masse et al., 1984). Oral traditions and ethnohistorical accounts suggest that inter-village fighting was occurring. This may have led to methods devised for protecting one's village. Although a rise in population would have led to greater demands on villages to expand their agricultural base, it seems unlikely that the population would have grown to a degree where arable land became rare. Did widespread warfare emerge as a result of these pressures?

Liston and Tuggle (2006) noted that warfare in Palau was instigated to conquer new territory, develop tribute relationships, acquire slaves or concubines, and obtain goods, especially money beads. Is it possible that the transition from terrace construction to traditional villages around AD 1200 emerged as a result of other factors apart from population pressure such as the introduction of exotic goods or people from places outside of Palau? Oral traditions seem to suggest that the Yapese and Palauans were coming into more frequent contact. It is still not clear though when the production of stone money first began; it is likely that the earliest episodes of quarrying are few in number and scattered among the many smaller Rock Islands, making them difficult to locate. But, petrographic studies seem to suggest that Palauan ceramics were making their way north to Fais (Intoh and Dickinson, 2002) and Ngulu (Intoh, 1981; see also Dickinson and Shulter, 2000; 223, 235) perhaps as early as 2000 years ago, although the dates associated with this material are uncertain. Interaction between Yap and the outer atolls was taking place as early as AD 620 based on the presence of Yapese Plain ware ceramics found on Ulithi (Descantes, 1998; 192, 202). Whether this is indicative of the more extensive exchange network that developed between Yap and the eastern-lying coral atolls known as the *sawei* is unclear (Descantes, 1998). Is it possible, as Berg (1992) suggested, that the Yapese were coming to Palau around AD 1000 (Berg, 1992) and that contacts between the two groups began intensifying shortly thereafter? This is somewhat speculative, although the influx of peoples from another island, speaking another language, who had access to material goods and labor, could have easily influenced the rise of sociopolitical complexity in Palau and the coalescence of power within particular groups (see Nero n.d. for further discussion).

> One common tactic is for politically influential persons, or persons hopeful of becoming politically influential, to attempt to bolster their intrasocietal influence by external contacts with outsiders... (Helms, 1992:160).

One possible item exchanged between Yap and Palau was glass beads, used as a form of currency traditionally in Palau (Ritzenthaler, 1954). It is unknown when bead money became an important trade item or how it was brought into Palau, but the possible acquisition by the Yapese with help from the Outer Islanders, may have helped secure continued access to Rock Island quarries and strengthened social bonds through gift-giving and intermarriage. Other possible indicators of earlier contacts between Yap, Palau, and the Outer Islands include the adoption of the *Terebra* adze type across the Caroline Islands after about AD 1.

> The material remains of the *railfei* and evidence of quarry sites in Palau, and the exotic materials excavated in the outer islands, along with the ethnography indicating the vast distances traveled in the sawei, and elsewhere, using traditional seacraft and navigational techniques, must be regarded as echoes of regular inter-island voyaging, at least over the last 1000 years or so (Rainbird, 2004; 247).

In the central and eastern Caroline Islands, Alkire (1978; 124) noted how frequent overseas exchanges functioned.

> These ties permitted members of the ranked societies to move freely between islands and to request and expect aid from any other island within the system in case of disaster and resource shortages. The systems also facilitated "everyday" exchange as well, so that regular and/or predictable shortages of food, timber, and other resources and personnel could be easily balanced. The sociopolitical and kinship ties between the islands made it relatively easy for individuals to move from one island to another, if necessary, to overcome the uneven distribution of certain classes of individuals.

Lessa (1950; 45), in regards to interactions between Yap and Ulithi, also commented that:

> Many Ulithi women have migrated to Yap, where they have married and settled down. Their children have been adopted into the lineages of their *sawei*, and, largely because of the depletion of some of these lineages in recent years, they have attained positions of headship. On account of the caste restrictions which apply to males from other islands, the number of men who have migrated to Yap is far less.

D'Arcy (2006; 56) notes a similar arrangement between Yapese and Palauans.

> When Kubary visited Palau in 1882, he traveled with 62 Yapese bound for the quarries. Upon arrival, he found 400 Yapese already collecting aragonite [*sic*]. Their presence was only possible through the cooperation of local rulers. The Yapese had to act respectfully to their hosts, and perform menial tasks such as gathering firewood and building fish weirs in return for the right to quarry. Marriage links and other exchange relationships between villages on Yap and the host communities on Palau, Koror, and Ngkeklau reinforced this arrangement.

These interactions and exchange behaviors, including intermarriage, created or maintained social bonds that linked communities and ensured access to necessary resources, although these resources were not necessarily crucial to survival (see Alkire, 1978; 124–131). The result

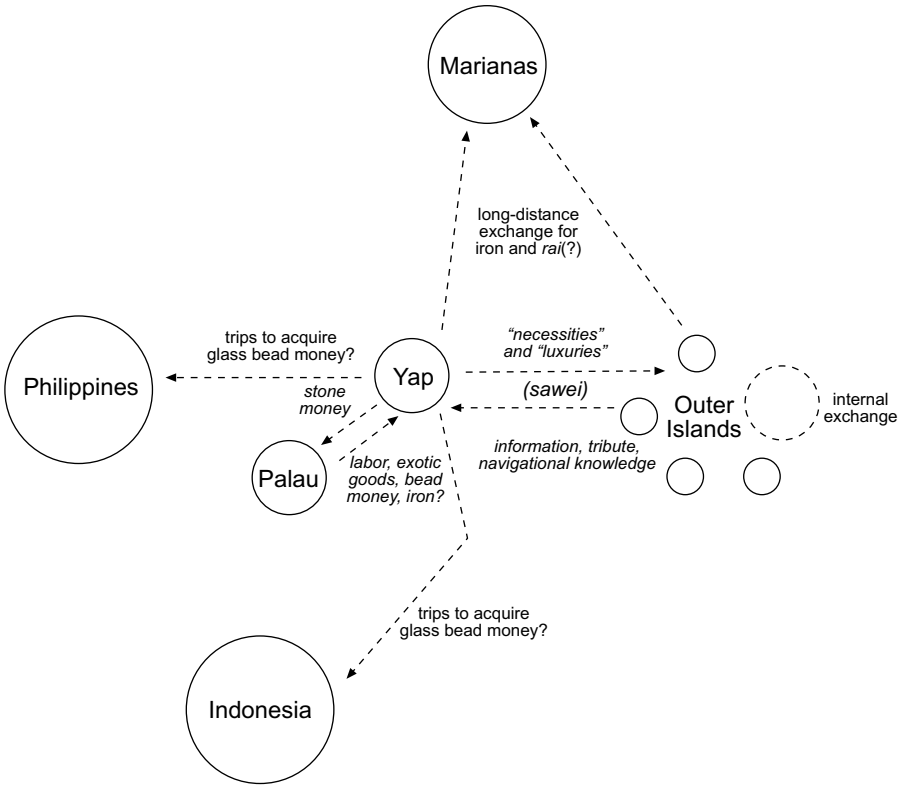

Fig. 6. A model for the acquisition and distribution of various goods and services in western Micronesia.

would be a balanced form of reciprocity where there was an equal exchange of offerings, and not one of negative reciprocity in which material interest was primary (see Sahlins, 1965). This is an expected outcome of symmetrical relations following the principles of interregional interaction (Stein, 2002).

Archaeological investigations

Archaeological data recovered from stone money quarries also lends insight into high levels of socioeconomic autonomy by the Yapese while working in Palau. The primary evidence comes from the Metuker ra Bisech site which appears to be the only known quarry solely used by the Yapese for stone money manufacture—others have evidence of prehistoric Palauan occupation or burial activity (Fitzpatrick, 2003b). The faunal assemblage found here is significantly less taxonomically diverse (with less than half the number of mollusk species and no fish remains) compared to Omis Cave (Fitzpatrick, 2003b) or other Rock Island sites associated with Palauan settlement (see Masse, 1989; Carucci, 1992). In stark contrast to other Yapese quarry sites I have investigated, no fish or other shellfish were found in archaeological deposits at the site. Due to the general paucity of archaeological research Yap and well preserved faunal assemblages, it is difficult to make comparisons of marine food procurement strategies used by the Yapese in their homeland and in Palau during quarrying expeditions. But, the lack of taxonomic diversity and food remains in general, could suggest that Palauans placed restrictions on the gathering of some food items or that the Yapese preferred certain taxa.

The discovery of iron tools during excavation at Metuker ra Bisech and differences in stone money production techniques through time hint at the changes that resulted from European contact (Fitzpatrick et al., 2006). The differential acquisition of foreign technologies such as iron picks, axes, and bowls (Descantes, 2002), and their use for specific activities such as stone money quarrying, indicate that the Yapese had access to these materials. When and how these technologies were introduced is still unclear. However, it is well-known that before contact, non-Micronesian goods were incorporated into native inter-island exchange systems through Guam or ventures to the Philippines (Hezel, 1983; Descantes, 2002). It is likely that metal bowls and other items were introduced into Yap by the 16th century (Descantes, 2002; 233), suggesting that the Yapese, at least initially (see Ehrlich, 1984), had better access to iron tools than Palauans who did not establish strong ties with Europeans until after 1783 when the British ship the *Antelope* wrecked on Ulong Island.[3] If so, the Yapese may have solicited the aid of Outer Island navigators to obtain iron tools and other goods to facilitate stone money production and encourage continued ties with Palauans using iron as a potential trade item. This is not supported by archaeological data, however, due to a lack of research

[3] Keate (1793) mentions the presence of iron and other material evidence of foreign contact in Palau.

at contact period sites in Palau. A tentative model of how interaction spheres were constructed in western Micronesia as part of the *sawei* and stone money quarrying can be proposed (Fig. 6). This model, however, will surely be modified in the future as archaeological research continues, especially in Palau and communities in the Philippines and/or Indonesia where glass beads are thought to originate.

The s*awei* exchange system

One of the most important and widespread exchange networks known in Micronesia was the *sawei* which involved visitations to Yap (specifically, the Gagil district) by the eastward lying Outer Islanders to engage in reciprocal hospitality and the exchanging of gifts, including bamboo, Polynesian chestnuts, *Tridacna* shells, canoes, turmeric, coconut products, fish, iron, mother-of-pearl shells, *Spondylus* shells, and many other items (Alkire, 1980; 232; Hunter-Anderson and Zan, 1996; Descantes, 1998; 8; D'Arcy, 2006; 146–156). Researchers have suggested that the groups involved in the *sawei* exchange network were pivotal in developing stone money production (e.g., Alkire, 1980). Lingenfelter (1975; 147) remarked that the *sawei* relationship is:

> . . . best expressed by the giving of food and shelter while the outer islanders reside on Yap and supplying lumber and other of Yap's resources not available on the atolls. Whenever these people come to Yap they are cared for by particular clan estates as if they were children of that patrician.

Alkire describes the sawei as

> The tribute. . .delivered to Yap by a fleet of canoes composed of one or more representatives from each of the outer islands. The expedition began at the more distant islands with the canoes proceeding from island to island on their way to Yap. At each stop local representatives and canoes joined the fleet so that by the time the convoy reached Yap it included 10 or more canoes. Four of the outer islands were focal points for the expedition. These were Lamotrek, Wottagai at Wolei, Fais, and Falalup and Mogmog at Ulithi. In the context of the *sawei* these islands were ranked higher than the other outer islands and their chiefs consequently were responsible for the expedition as it made its way to Yap.

Friedman (1981) suggested that the Yapese Empire was similar to the long-distance prestige-good trade system that developed in western Polynesia and according to Small (1995; 76), the *sawei* provided the "hierarchical armature for the development of fixed rank relations between communities within the larger political entity of Yapese control." As Descantes (1998; 41) remarked, "[t]he peripheral location of an island and the small choice of possible exchange partners in an exchange network induced trade scarcity and the imposition of a political economic monopoly." However, although it appeared that the Yapese were superordinate and had superior status, they invariably received less economic benefit from the exchange than the Outer Islanders (Lingenfelter, 1975; 153). Lessa (1950) believed this may have been due to the Yapese enjoying the subservience of the Outer Islanders when they visited.

Hage and Harary (1991) developed a topologic model for the *sawei* that incorporated many of the same groups involved with stone money manufacture and exchange (Fig. 7). In their representation of the *sawei*, Hage and Harary (1991; 17–18) described how the Yapese used the items received from the Outer Islanders to "manipulate their alliance relations in Yap" and, following Alkire (1965), suggested that these were necessary for survival in the atolls, but were also used for exchange and enhancing status. However, their "structure" implies that the Yapese were in primary control of the flow and distribution of goods and services and that other players in the system, although perhaps using exchange goods to their benefit (e.g., Outer Islanders bringing pottery back to the atolls for further exchange) (Hunter-Anderson and Zan, 1996; Descantes, 1998), were following a system dictated by the Yapese. Was this actually the case through time? Why did these contacts take place and what were some of the outcomes?

There appears to be a direct outgrowth of the *sawei* that incorporated several new commodities meant to increase status, political control, power, and prestige. These commodities included navigational knowledge (Alkire, 1980), probably watercraft manufacture, and stone money. Interestingly, evidence suggests that political maneuvers were undertaken by different groups which both enhanced *and* decreased their power and status at the same time.

> The status differentiation accepted by the outer islanders in *sawei* relations was a price individual communities were willing to pay in order to gain access to limited basic resources. The Yapese were willing to accept similar social discrimination in their relations with Palauans in order to obtain stone valuables (Alkire, 1980:235).

If stone money quarrying in Palau was taking place before the arrival of Europeans and was affected by political events in Yap related to *sawei* exchange mechanisms, stone money may have become increasingly important in the 16th and 17th centuries for a number of reasons.

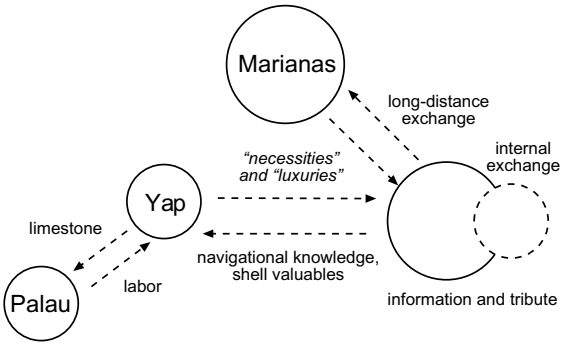

Fig. 7. "Topologic Structure" of the Yapese Empire in Micronesia (after Hage and Harary 1991; 17).

> As mining increased on Palau during the 14th and 15th centuries the party based in eastern Yap (i.e., Rull and Tomil [districts of Yap]) may have had to turn to stronger measures to ensure a steady supply of tribute and *Spondylus* from the low islands, Eauripik in particular. The association of Gatsapar [Gachpar] with both Ifaluk in the 16th century and Eauripik in the 17th century may signal the formation of the *sawei* network as it survived down to the early 20th century. The link here would have been political and military, with Gatsapar calling on the low islanders for ever more tribute to offset the increase of *fei* [*rai*] in circulation on Yap (Berg, 1992:160).

Inter-district fighting in Yap and the greater quantities of stone money being brought back from Palau probably put pressure on Gagil to exact more tribute from the Outer Islanders to reduce the strengthening alliance between Rull and Tomil, two of the major districts in Yap. This alliance was reinforced during the 19th and 20th centuries as they established strong relations with Europeans, one of which was an active trade of trepang (sea cucumber) and *copra* (dried coconut meat) for firearms (Berg, 1992:161). Andrew Cheyne, who lived in Palau and traveled through the western Pacific from 1841 to 1844, was known to trade exclusively with Rull, as did his predecessor, Alfred Tetens, who was stationed on Yap as a representative of the German Godeffroy Company (Cheyne, 1852; Tetens, 1958). The power of the *vaani pilung* (the Rull "side of chiefs" or "chiefs' party, akin to an exclusive group or club) (see D'Arcy, 2001; 169, 2006; 148) became even greater as American and European traders began participating in the quarrying process. This may have led to their dominance over the *vaani pagal* (young men's party) (D'Arcy, 2001; 169) forces of Gagil for the first time (see Berg, 1992; 161; D'Arcy, 2006; 148). According to Berg (1992; 161), the Germans appear to have quickly ended this accretion of power by Rull and Tomil by supporting the Gagil side after the departure of an American Captain named David Dean O'Keefe (see below) at the turn of the 19th century, preferring their close association because "of improved inter-island transportation, improved opportunities for contract work and the resettlement of some low islanders following typhoons." The long-standing relationship that Gagil had with the Outer Islanders in the *sawei* exchange proved to be critical, for it allowed them to gain back power which had been taken over by the competing districts of Rull and Tomil during the course of nearly half a century. Photographs of the Yapese quarrying stone money in Palau around 1908–1910 (Müller, 1917; 128, 132) appear to have been taken in southern Babeldaob (Airai) which was controlled by the Reklai chief in Palau and used by Gagil. This supports the ethnohistoric accounts documenting how the Germans aided Gagil in the late 19th/early 20th century.

According to oral traditions and ethnographic observation, it appears that the *sawei* evolved over time to incorporate stone money as an element of exchange. To what degree stone money influenced the acquisition of other valuables by the Yapese is not yet clear, although future research dedicated to examining other possible exchange items such as ceramics and non-native shells may help resolve this issue. The question remains as to whether interactions with Palauans, or between Palauans themselves, affected the production and exchange of stone money.

Stone money production and exchange

Yapese stone money quarrying in Palau represents a case where members of a culturally and linguistically distinct society traveled to another island group to produce a valuable exchange item from an exotic resource. On the surface this appears to be an asymmetrical relationship at least geographically, because Palauans rarely, if ever, traveled to Yap as part of the exchange. A crucial part of analyzing this process is understanding the exchange mechanisms involved with securing access to limestone over time, the role this exchange valuable had in Palauan and Yapese societies, its transformative power in inter- and intra-island sociopolitical developments, and the evolution of the system when Europeans became involved in the transportation of labor and stone money back to Yap.

Oral traditions state that a Yapese navigator named Anagumang first discovered the stone in a Palauan cave and ordered his men to cut it into the shape of a fish, and then into a full moon (de Beauclair, 1971; see also de Beauclair, 1963; Fitzpatrick, 2003). Ethnographic research on Palauan-Yapese linkages suggests that Anagumang and Fathaan, also a navigator, were in competition to bring money back to Yap and continued to do so with help from coral atoll dwelling Outer Islanders east of Yap (Nero n.d.). After this first stone was brought to Yap, it became highly prized, creating a demand for more (de Beauclair 1971; 185). This was a result of the rarity of limestone in the region and the great risk and effort involved when sailing to Palau and bringing the disks back to Yap successfully (for descriptions of how this was done, see Fitzpatrick and Diveley, 2004; Hazell and Fitzpatrick, 2006).

Oral traditions further describe the process by which stone money was quarried after the initial trip(s). A number of expeditions were apparently carried out afterward by Fathaan and Anagumang before Europeans arrived and Outer Islanders became increasingly involved in later quarry expeditions, primarily as navigators. Not only were trips made to quarry stone money in Palau, and possibly Guam, but to other islands such as Chuuk in the Eastern Carolines where they obtained *gau* and *thauai*, both forms of shell currency used by the Yapese (Nero n.d.; 13). These and other shell valuables including *chesiuch* (oyster shell, and a form of Palauan women's money) (Adams et al., 1997), and *kereel* (coconut fiber cord), were apparently used to purchase or gain access to quarry sites in the Rock Islands. The Yapese also was reported to perform corveé

labor in Palau helped build roads, platforms, and other stone constructions (Nero n.d.).

The chief of Rull in Yap, for example, gave bead money of a type called *Churwoo* to the Ibedul (chief of Koror) in Palau, while a second piece of money was given by Gagil (Gachpar, Yap) to the Reklai (chief in Babeldaob) in Melekeok (Palau). These pieces of Palauan "money" consisted of "polychrome and glass beads, crescentic bar gorgets, and beads of pottery," all of which were of foreign origin (Ritzenthaler, 1954:9). Although, the Reklai did not have direct control over the *chelebacheb* (Rock Islands) which was overseen by the Ibedul in Koror, Nero (n.d.; 20) notes that:

> the reason that Reklai bought a rock island, is that he was leader of the other heaven [Babeldaob], and it would be bad for him not to have his hand on the spear as well [i.e., participate in exchange with the Yapese as well]. So they tied the relationship between Yap and Palau, those two heads. That was before the time of the Westerners, before the time of the Spanish, long before that. And the Yapese came by canoe to take the *balang* back to Yap on their rafts.

The exchange of valuables for land rights apparently settled on-going disputes between Yap and Palau (Nero n.d.; 13), although the exact nature of these disputes is not well understood. It is interesting to note, however, that multiple lines of evidence suggest that during the time the Yapese were initiating stone money production, there was widespread warfare in Palau with inter-village fighting fairly common (Liston and Tuggle, 2006). The fact that there were villages in Yap competing for power (resulting in the continued acquisition of stone money and perhaps other valuables), along with those in Palau, raises interesting questions about how each side influenced the other sociopolitically. "Because those that came from the two heavens [Babeldaob and the Rock Islands] of Yap couldn't come and work together here, those people of Tomil and Rull (two of the districts in Yap) went to Reklai and begged of him for help" (Nero n.d.; 21).

Discussion

It has been suggested that the exchange of valuables or prestige-goods is intimately connected with alliance formation and maintenance and the development of competitive exchange to obtain or secure leadership roles and settle disputes without forced conflict (see Malinowski, 1922; Strathern 1971; Dalton, 1977; 204–205; Earle, 1982, 2002 for further discussion). The development of exchange between the Yapese and Palauans had many facets, with each group relying on the other for certain goods or resources. The effect would have been not only the maintenance of existing leadership positions in both societies (depending on the extent to which these goods or resources multiplied), but the solidifying and expansion of power by only a few individuals, primarily chiefs in Yap and Palau (although it should be recognized that these individuals in their respective societies were competitive and in conflict). As Earle (2002; 92) noted, "[p]ersonal success is measured by increased prestige that attracts spouses and other political alliances, and amasses social standing." "By obtaining foreign objects through exchange, chiefs held these powers, accessible only to the chiefs who participated in these external exchanges" (Earle, 2002; 92).

> [A]s societies increase in complexity, they require greater amounts of external input in the form of goods to supply growing populations and meet the status-differentiation needs of developing social classes. The result is a concomitant pressure on certain segments of these populations to establish enduring ties with their counterparts in other societies who provide access to these goods. The most effective way of forging such links is through the establishment of common salient affiliations linking all those in intense contact, most commonly the developing elite (Schortman, 1989; 60).

In contrast to Hage and Harary (1991 also 1996) and others (e.g., Alkire, 1980), I would argue that although the Yapese may have appeared to be the 'parent' of Outer Island 'children' from which they demanded tribute, the atoll dwellers were not necessarily slavish and subordinate. The Yapese may have sorely needed their navigational knowledge to make the arduous trip to Palau with laborers and then back to Yap with shipments of stone money. The labyrinth of coral reefs in Palau, combined with the winds, currents, and other climatic factors affecting travel between the two island groups, would have required skilled canoe builders and the sailing experience of navigators (Alkire, 1978; 115; Alkire, 1980; Fitzpatrick and Diveley, 2004; D'Arcy, 2006; Hazell and Fitzpatrick, 2006) that Yapese society did not readily have themselves some or all of the time.

As the Yapese ventured to Palau with the aid of Outer Islanders as part of this *trade diaspora*, they brought with them goods, laborers, and according to most accounts, bead money (although when these money beads became part of transactions is unclear) (Ritzenthaler, 1954). Oral traditions report that the Yapese provided corveé labor to Palauans for building stone pathways, foundations, and docks, for example, in exchange for the right to quarry limestone in the Rock Islands. In Hawai'i, a similar arrangement was made by chiefs in whom agricultural land was allocated to commoners in return for corveé labor (Earle, 2002; 91). The influx of these exotic goods and a large labor force to help build stone constructions may have helped the main chiefs in Palau, the Ibedul and Reklai, concentrate their power. This would have been especially advantageous if heavy inter-village conflicts were occurring, allowing them to employ other villages for support and defense (Liston and Tuggle, 2006). Reports of Yapese individuals being granted chiefly titles, intermarriage, cognates of Yapese words used in Palau, and place names in Palau that are Yapese in origin (Nero n.d.), all

point to a long-term relationship that developed prior to European contact and continued for centuries. But were the Yapese themselves totally subservient to the Palauans as some evidence suggests, or were there underlying reasons for the strong intercultural connections observed in these accounts?

Similar to what was happening between the Yapese and the atoll dwelling Outer Islanders, I suggest that the relationships which developed between the Yapese and Palauans through stone money expeditions was one of mutual need and desire. On the surface it may have appeared to be a one-sided affair whereby the Yapese would forsake their autonomy outside of Yap and play a subservient role to secure and maintain access to the Rock Island quarry sites. However, given what is known from the oral traditions and ethnographic accounts, the Palauans had much to gain from their interactions with the Yapese. Not only did they reportedly receive the highly desired bead money (Ritzenthaler, 1954) and other exotic or valuable goods, but had an external labor force with which to build or improve upon their infrastructure. It is possible that as these contacts became more frequent, with each side desiring something from the other, the relationships eventually led to the inter-marrying of ranked persons between the two groups. Kinship bonds could then be forged through exogamy to solidify access to valued resources. This probably resulted in the development of more complex political ties between the Palauans and Yapese and continued access to these goods and services. In this respect, using oral traditions and ethnohistoric accounts, we see the building of alliances through inter-marriage and the granting of titles, and the two-way movement of goods and/or services which strengthened the hold on power by Palauan chiefs and resources by the Yapese. This social relationship was, at least on the surface, a case of *diaspora marginality*, where the host community (Palau) tolerated the Yapese because of their usefulness in building stone constructions and presumably other work activities. There was a clear separation of groups and Yapese autonomy was restricted, despite the introduction of exotic goods such as glass beads. What long-term sociopolitical changes in Palau could have resulted from these on-going interactions?

Using the principles of interregional interaction (Stein, 2002) and applying them to western Micronesian interaction spheres, it appears that sociopolitical development in Palau and Yap was not the result of interactions between competing polities that eventually formed cores and peripheries, typical of unidirectional models like world systems and acculturation (Foster, 1960; Herskovits, 1937; Wallerstein, 1974). Instead, the rise of social complexity in Yap and Palau may best be explained by the actions of individuals (chiefs) and smaller groups (clans) on both sides seeking to acquire items of prestige, resources, and maintain good social relationships. I believe that one of the major instigators of change in these two island societies was stone money production. But this was only one piece of a more complicated puzzle involving multiple participants and numerous exchange items through time. Continued archaeological work in the Philippines and other nearby regions should help to resolve questions concerning glass bead origins and other exchange items that Palauan oral traditions describe as being important (Ritzenthaler, 1954; Titchenal, 1999).

The integration of oral traditions, ethnohistoric accounts, and archaeological research have helped to postulate when the Yapese quarrying of stone money began, how different groups contributed to the evolution of this exchange network, and the implications it had on the development of intra- and inter-island sociopolitics. Principles of interregional interaction (Schortman, 1989; Schortman and Urban, 1992; Stein, 2002) serve to identify aspects of Yapese and Palauan societies that changed as a result of these exchange relationships. Both groups utilized and exploited each other for their own gains, but with help from other players in the network (i.e., Outer Islanders and Europeans).

> Interregional interaction, and especially the colonial encounters of the 16th–19th centuries, were not bipolar confrontations between Europeans and indigenous peoples but, instead, involved the interaction of *multiple* groups (Stein, 2002; 906) (emphasis added).

In previous discussions on Micronesian exchange systems (e.g., Alkire, 1978), including stone money (Berg, 1992; Gillilland, 1975), the analytical emphasis has been placed on the domination of one group over another and the control of valued resources by a host community over their "guests." Oral traditions describe Palauans using Yapese for corveé labor and Outer Islanders as "children" of the Yapese parents in the *sawei* and so this appears to be the case. I do not discount that these feelings of superiority or control by one group over another was real. I think it is likely that each group, depending on whom they were interacting with, felt that they had some jurisdiction over the other. What is becoming more apparent after combining and comparing different sources of data, however, is that each group required something that the other had to enhance their own prestige and power base in their homeland which led to the establishment of more mutually beneficial and recursive relationships. Yapese chiefs wanted limestone for their *rai* because it was a valuable commodity back home. They were willing to sacrifice some autonomy to satisfy Palauan exchange requirements. Interestingly, evidence for inter-marrying and Yapese place names in Palau suggest that this was a more cordial relationship than indicated by most accounts. This may have been a result of Palauans wanting access to other goods such as bead money and possibly iron that the Yapese had access to (Descantes, 2002).

The same scenario applies to Yapese—Outer Islander relations. Although coral atoll dwellers may have participated in the *sawei* to ensure access to goods and commodities they did not have (e.g., ceramics) or may have needed due to natural catastrophes (Alkire, 1978; Descantes,

1998), they had crucial skills for inter-island voyaging (Alkire, 1980) and perhaps others less well documented. The skills of canoe craftsmen, navigators, and sailors were essential for making the voyage to Palau and then back to Yap with stone money disks and to other islands for various goods. There is little evidence to indicate why the Outer Islanders would have become involved in these pursuits, although as Schortman (1989; 60) notes, "[a]s intersocietal interaction increases, there is a greater dependence among societies, especially the elites, for needed goods." It probably ensured them better access to resources they needed such as ceramics and timber. According to most accounts, these were being negotiated not just with Gagil as before, but also Rull and Tomil who were joined together in competing for power in Yap.

One of the potentially important insights gained from examining Western Carolinian interregional interaction as it pertains to stone money production and exchange is that these interactions may have influenced the rise of social complexity in Palau and Yap. Interestingly, Liston and Tuggle (2006; 178) state that:

> Palau's isolation from the rest of Micronesia resulted in little contact during its pre-Contact history, and as such it is probable that interaction with other cultures had no significant effect on Palauan cultural patterns and change, including those of warfare.

Although it is clear that Palau remained fairly isolated from European contact until the late 1700 s, despite many attempts by the Spanish to find the islands (Callaghan and Fitzpatrick, 2006), interaction likely waxed and waned and it would be wrong to assume *a priori* that Palau's society was structured solely by internal social dynamics. Oral traditions and ethnohistorical accounts suggest that the Yapese were coming to Palau to quarry stone money prior to intense European contact, as evidenced by historical chroniclers, and that Palauan pottery was also making its way to atolls in the north at some point in prehistory (Intoh and Dickinson, 1994; Dickinson and Shulter, 2000; 235). Although, the relatively few cases of prehistoric interaction between Palau and other islands in western Micronesia seem to suggest that contacts were rather punctuated through time, at least based on current evidence, this should not diminish the role that even minor contacts could play in modifying cultural behavior as the introduction of iron clearly shows. In the case of stone money production, could the acquisition of exotic goods by chiefly elites have fueled the concentration of power in Palau, leading to the development of traditional stonework villages (Wickler, 2002a) and abandonment of smaller and less consolidated households. Could the introduction of exotic items such as bead money and the use of Yapese labor create such changes? This hypothesis is not fully testable now, but it seems a plausible explanation that could eventually be joined with other models suggesting that conflict or population increase were responsible for changes in settlement patterns around AD 1200.

European involvement in the manufacture of stone money drastically transformed the modes of exchange and the value placed on individual *rai*. These culture contacts led to the use of metal tools for stone money production and the transporting of larger disks in higher numbers than was possible with traditional means. Interaction between these groups during the last few centuries led to the transfer of technologies, only some of which are archaeologically visible. The use of metal tools was the most common (Fitzpatrick et al. 2006), but even these have largely escaped discovery. Continued research on traditional villages in Palau, Yapese stone money quarries, and contact period sites in western Micronesia should help resolve some of the lingering questions regarding the transformation of sociopolitical relationships in the region and the effects advanced technologies had on exchange processes after European contact. This will inevitably lead to more focused comparative studies and explanations for the rise of complex societies not only in Micronesia, but other parts of Oceania.

Acknowledgments

I am grateful to the Palau Bureau of Arts and Culture (BAC) for their on-going support of my research over the past decade. Thanks to Jerry Jacka, William S. Ayres, Jon Erlandson, and Madonna Moss who all commented on previous drafts of this paper and helped me to develop ideas about stone money production and interaction spheres in Micronesia. Comments from two anonymous reviewers also helped to clarify a number of important issues. Research was funded by the National Science Foundation (SBR-000531), the Center for Asian and Pacific Studies at the University of Oregon, and a Sasakawa Graduate Fellowship. Funding for AMS radiocarbon dates was enhanced by NSF sponsorship and cooperative agreements with NOSAMS (OCE-9807266) and the University of Arizona AMS Facility.

References

Adams, W.H., Gibbons, F., Smith, D.R., 1997. Palau ethnographyMicronesian Endowment for Historic Preservation, Republic of Palau. U.S. National Park Service, San Francisco.

Alkire, W.H., 1978. Coral Islanders. AHM Publishing Corporation, Arlington Heights.

Alkire, W.H., 1980. Technical knowledge and the evolution of political systems in the Central and Western Caroline Islands of Micronesia. Canadian Journal of Anthropology, 229–237.

Berg, M.L., 1992. Yapese politics, Yapese money and the *sawei* tribute network before WWI. The Journal of Pacific History 27, 150–164.

Callaghan, R., Fitzpatrick, S.M., 2006. On the relative isolation of a Micronesian Archipelago during the historic period: the Palau case study. International Journal of Nautical Archaeology 36, 353–364.

Carucci, J., 1992. Cultural and natural patterning in prehistoric marine foodshell from Palau, Micronesia. Unpublished Ph.D. dissertation. Department of Anthropology, Southern Illinois University, p. 271.

Cheyne, A., 1852. A description of Islands in the Western Pacific Ocean North and South of the Equator: with sailing directions together with

their productions: manners and customs of the natives and vocabularies of their various languages. London.
Cohen, A., 1969. Custom and Politics in Urban Africa: A Study of Hausa Migrants in Yoruba Towns. University of California Press, Berkeley.
Cohen, A., 1971. Cultural strategies in the organization of trading diasporas. In: Meillassoux, C. (Ed.), The Development of Indigenous Trade and Markets in West Africa. Oxford University Press, London, p. 454.
Cohen, A., 2003. Custom and Politics in Urban Africa: A Study of Hausa Migrants in Yoruba Towns. University of California Press, Berkeley, p. 252.
Conkey, M., Gero, J., 1997. Programme to practice: gender and feminism in archaeology. Annual Review of Anthropology 26, 411–437.
Crosby, A.W., 2004. Ecological Imperialism: The Biological Expansion of Europe 900–1900. Cambridge University Press, Cambridge.
Dalton, G., 1977. Aboriginal economies in stateless societies. In: Earle, T.K., Ericson, J.E. (Eds.), Exchange Systems in Prehistory. Academic Press, New York, pp. 191–212.
Deagan, K.A., 1990. Sixteenth-century Spanish-American colonization in the Southeastern United States and the Caribbean. In: Thomas, D.H. (Ed.), Archaeological and Historical Perspectives on the Spanish Borderlands East. Columbian Consequences, vol. 2. Smithsonian Institution Press, Washington D.C, pp. 297–314.
D'Arcy, P., 2006. The People of the Sea: Environment Identity and History in Oceania. University of Hawaii Press, Honolulu.
D'Arcy, P., 2001. Connected by the sea: towards a regional history of the Western Caroline Islands. The Journal of Pacific History 36, 163–182.
de Beauclair, I., 1963. The stone money of Yap Island Bulletin of the Institute of Ethnology. Academia Sinica 16, 147–160.
de Beauclair, I., 1971. Studies on Botel Tobago, and Yap. In: Tsu-k'uang, L. (Ed.), Asian Folklore and Social Life Monographs. Orient Cultural Service, Taipei, pp. 183–203.
Descantes, C.H., 1998. Integrating archaeology and ethnohistory: the development of exchange between Yap and Ulithi, Western Caroline Islands. Unpublished Ph.D. Dissertation. Eugene: University of Oregon.
Descantes, C.H., 2002. Contained identities: the demise of Yapese clay pots. Asian Perspectives 40, 227–243.
Dickinson, W.R., Shulter Jr., R., 2000. Implications of petrographic temper analysis for Oceanic prehistory. Journal of World Prehistory 14, 203–266.
Dryson, S., 1985. Comparative studies in the archaeology of colonialism. BAR International Series, 233, Oxford.
Dunnell, R.C., 1991. Methodological impacts of catastrophic depopulation on American archaeology and ethnology. In: Thomas, D.H. (Ed.), The Spanish Borderlands in Pan-American Perspective. Columbian Consequences, vol. 3. Smithsonian Institution Press, Washington D.C, pp. 561–580.
Earle, T.K., 1982. Prehistoric economies and the archaeology of exchange. In: Ericson, J.E., Earle, T.K. (Eds.), Contexts for Prehistoric Exchange. Academic Press, New York, pp. 1–12.
Earle, T.K., 2002. Commodity flows and the evolution of complex societies. In: Ensminger, J. (Ed.), Theory in Economic Anthropology. Altamira, Walnut Creek, pp. 81–103.
Ehrlich, P.R., 1984. Koror: a center of power, commerce, and colonial administration. Saipan, C. M: Micronesian Archaeological Survey. Office of the High Commissioner, Trust Territory of the Pacific Islands.
Einzig, P., 1966. Primitive Money: In its Ethnological, Historical, and Economic Aspects, second ed. Pergamon Press, Oxford.
Emberling, G., 1997. Ethnicity in complex societies: archaeological perspectives. Journal of Archaeological Research 5, 295–344.
Fitzpatrick, S.M. 2003a. Stones of the butterfly: an archaeological investigation of Yapese stone money quarries in Palau, Micronesia. Unpublished Ph.D. dissertation, Department of Anthropology, University of Oregon.
Fitzpatrick, S.M., 2003b. Early human burials in the Western Pacific: evidence for a.c. 3000 year old occupation on Palau. Antiquity 77, 719–731.
Fitzpatrick, S.M., 2002. A radiocarbon chronology of Yapese stone money quarries in Palau, western Micronesia. Micronesica 34, 227–242.
Fitzpatrick, S.M., 2001. Archaeological investigation of Omis Cave: a Yapese stone money quarry in Palau. Archaeology in Oceania 36, 153–162.
Fitzpatrick, S.M., Diveley, B., 2004. Interisland exchange in Micronesia: a case of monumental proportions. In: Fitzpatrick, S.M. (Ed.), Voyages of Discovery: The Archaeology of Islands. Praeger, Westport, pp. 129–146.
Fitzpatrick, S.M., Petersen, J., Caruso, A., 2006. Metal tools and the transformation of an Oceanic exchange system. Historical Archaeology 40, 1–19.
Foster, G., 1960. Culture and Conquest: America's Spanish Heritage. Quadrangle Books, Chicago, p. 272.
Friedl, E., 1975. Women and Men: An Anthropologist's View. Holt, Rinehart and Winston, NewYork.
Friedman, J., 1981. Notes on Structure and History in Oceania. Folk 23, 275–295.
Gillilland, C.L.C., 1975. The Stone Money of Yap: A Numismatic Survey. Smithsonian Institution Press, Washington D.C.
Hage, P., Harary, F., 1991. Exchange in Oceania: A Graph Theoretic Analysis. Clarendon Press, Oxford, p. 336.
Hage, P., Harary, F., 1996. Island Networks: Communication Kinship and Classification Structures in Oceania. Cambridge University Press, Cambridge, p. 318.
Hall, T., Chase-Dunn, C., 1993. The world-systems perspective and archaeology: forward into the past. Journal of Archaeological Research 1, 121–143.
Hazell, L., Fitzpatrick, S.M., 2006. The maritime transport of megaliths in Micronesia. Archaeology in Oceania 41, 12–24.
Helms, M.W., 1992. Long distance contacts, elite aspirations, and the age of discovery in cosmological context. In: Schortman, E.M., Urban, P.A. (Eds.), Resources, Power, and Interregional Interaction. Plenum Press, New York, pp. 157–174.
Herskovits, M., 1937. The significance of the study of acculturation for anthropology. American Anthropologist 39, 259–264.
Hezel, F.X., 1975. A Yankee trader in Yap: Crayton Philo Holcomb. The Journal of Pacific History 10, 3–19.
Hezel, F.X., 1983. The First Taint of Civilization: A History of the Caroline and Marshall Islands in Pre-Colonial Days 1521–1885. University of Hawaii Press, Honolulu, p. 372.
Hopkins, T., Wallerstein, I. (Eds.), 1982. World Systems Analysis: Theory and Methodology. Sage Publications, Beverly Hills.
Hunter-Anderson, R.L., Zan, Y., 1996. Demystifying the *sawei*, a traditional interisland exchange system. ISLA: A Journal of Micronesian Studies 4, 1–45.
Intoh, M., 1981. Reconnaissance archaeological research on Ngulu Atoll in the Western Caroline Islands. Asian Perspectives 24, 69–80.
Intoh, M., Dickinson, W.R., 1994. A petrological study of prehistoric pottery from Fais Island in Micronesia. Anthropological Science 102, 167.
Intoh, M., Dickinson, W.R., 2002. Prehistoric pottery movements in Western Micronesia: technological and petrological study of potsherds from Fais island. In: Bedford, S., Sand, C., Burley, D. (Eds.), Fifty Years in the Field: Essays in Honour and Celebration of Richard Shutler Jr's Archaeological Career. New Zealand Archaeological Monograph, vol. 25, pp. 123–134.
Janowitz, M., 1977. A sociological perspective on Wallerstein. American Journal of Sociology 82, 1090–1097.
Kardulias, P.N. (Ed.), 1999. World-Systems Theory in Practice: Leadership, Production, and Exchange. Rowman & Littlefield Publishers, Inc.,, New York.
Keate, G., 1793. An account of the Pelew Islands from the journals of Captain Henry Wilson in August 1783 there Shipwrecked. Luke White, Dublin, pp. 196.
Klingman, L., Green, G., 1950. His Majesty O'Keefe. Charles Scribner's Sons, New York.

Krämer, A., 1917. Palau, 3: Halbband in Ergebnisse der Südsee Expedition, 1908–1910. Hamburg: Herausgegeben von G. Thilenius. De Gruyter, Hamburg.

Labby, D., 1976. The Demystification of Yap: Dialectics of Culture on a Micronesian Island. University of Chicago Press, Chicago, p. 158.

Lane, F., 1976. Economic growth in Wallerstein's social systems: a review article. Comparative Studies in Society and History 18, 517–532.

Le Hunte, J.R., 1883. Report of HMS Espiegle to Sir G.W. Des Voeux, Acting High Commissioner for the Western Pacific, 10 October, 1883. General Proceedings (1–83). Central Archives of Fiji and the Western Pacific, Suva: Fiji.

Lessa, W.A., 1950. Ulithi and the outer native world. American Anthropologist 52, 27–52.

Lightfoot, K.G., 1995. Culture contact studies: redefining the relationship between prehistoric and historical archaeology. American Antiquity 60, 199–217.

Lingenfelter, S.G., 1975. Yap, Political Leadership, and Culture Change in an Island Society. University Press of Hawaii, Honolulu.

Liston, J., Tuggle, D., 2006. Prehistoric warfare in Palau. In: Arkush, E., Allen, M.W. (Eds.), The Archaeology of Warfare: Prehistories of Raiding and Conquest. University Press of Florida, Gainesville.

Lyons, C., Papadopoulos, J. (Eds.), 2002. The Archaeology of Colonialism. J.P. Getty Museum Publications, Los Angeles, p. 296.

Malinowski, B., 1922. Argonauts of the Western Pacific: An Account of Native Enterprise and Adventure in the Archipelagoes of Melanesian New Guinea. George Routledge and Sons, Ltd., London.

Masse, W.B. 1989. The archaeology and ecology of fishing in the Belau Islands, Micronesia. Unpublished Ph.D. Dissertation. University of Southern Illinois, Carbondale. Ann Arbor: University Microfilms.

Masse, W.B., 1990. Radiocarbon dating, sea level change and the peopling of Palau. Micronesica Supplement 2, 213–230.

Masse, W.B., Snyder, D., Gumerman, G.J., 1984. Prehistoric and historic settlement in the Palau Islands, Micronesia. New Zealand Journal of Archaeology 6, 107–127.

McBryde, I., 2000. 'Barter. . .immediately commenced to the satisfaction of both parties': cross cultural exchange at Port Jackson, 1788–1828. In: Torrence, R., Clarke, A. (Eds.), The Archaeology of Difference: Negotiating Cross-Cultural Engagements in Oceania. Routledge, London, pp. 238–277.

Mintz, S., 1977. The so-called world system: local initiative and local response. Dialectical Anthropology 2, 253–270.

Müller, W., 1917. Yap 1 Halbband in Ergebnisse der Südsee Expedition 1908–1910. Herausgegeben von G Thilenius, Hamburg.

Nero, K., n.d. Yapese–Palauan linkages: towards regional histories. Manuscript at the Palau Bureau of Arts and Culture library.

Parmentier, R.J., 1987. The Sacred Remains: Myth, History, and Polity in Belau. University of Chicago Press, Chicago, p. 352.

Phear, S., 2007. The Monumental Earthworks of Palau, Micronesia: A Landscape Perspective. Oxford, British Archaeological Reports, S1626.

Polanyi, K., 1965. Trade and Market in the Early Empires: Economies in History and Theory, second ed. The Free Press, New York, p. 382.

Rainbird, P., 2004. The Archaeology of Micronesia. Cambridge University Press, Cambridge.

Ramenofsky, A.F., 1987. Vectors of Death: The Archaeology of European Contact. University of New Mexico Press, Albuquerque, p. 300.

Ritzenthaler, R.E., 1954. Native money of Palau. Milwaukee: Milwaukee Public Museum Publications in Anthropology No. 1.

Sahlins, M., 1965. On the sociology of primitive exchange. In: Banton, M. (Ed.), The Relevance of Models for Social Anthropology. Tavistock, London, pp. 139–236.

Schortman, E.M., 1989. Interregional interaction in prehistory: the need for a new perspective. American Antiquity 54, 52–65.

Schortman, E., Urban, P. (Eds.), 1992a. Resources, Power, and Interregional Interaction. Plenum, NewYork.

Schortman, E., Urban, P. (Eds.), 1992b. The Place of interaction studies in archaeological thought. Resources Power and Interregional Interaction. Plenum, New York, pp. 3–15.

Small, D.B., 1995. Heterarchical paths to evolution: the role of external economies. In: Ehrenreich, R.M., Crumley, C.L., Levy, J.E. (Eds.), Heterarchy and the Analysis of Complex Societies. Archaeological Papers of the American Anthropological Association No. 6. American Anthropological Association, Washington D.C, pp. 71–85.

Stein, G.J., 1999. Rethinking World Systems: Diasporas, Colonies, and Interaction in Uruk, Mesopotamia. University of Arizona Press, Tucson, p. 206.

Stein, G.J., 2002. From passive periphery to active agents: emerging perspectives in the archaeology of interregional interaction. American Anthropologist 104, 903–916.

Strathern, A.J., 1971. The Rope of Moka: Big-Men and Ceremonial Exchange in Mount Hagen, New Guinea, second ed. New Guinea Cambridge University Press, Cambridge, p. 270.

Tetens, A., 1958. Among the savages of the South Seas: Memoirs of Micronesia, 1862–1868. Translated by F.M. Spoehr. Stanford: Stanford University Press. Translated from the German Vom Schiffsjungen zum Wasserschout, S. Steinberg (Ed.), 1888.

Tetens, A., Kubary, J., 1887. Die Carolineninsel Yap oder Guap nach den Mittheilungen von A. F. Tetens und Johann Kubary. Journal des Museum Godeffroy 1, 84–130.

Titchenal, P.B., 1999. Palauan money beads: an analysis of glass beads found with a child's burial at site B:OR-1:8, Feature 2, Burial Pit 2, Hung Kuo, Koror, Republic of Palau. Report prepared for Jeffrey Pantaleo Consultants, Honolulu, Hawaii.

Torrence, R., Clarke, A., 2000. Negotiating difference: practice makes theory for contemporary archaeology in Oceania. In: Torrence, R., Clarke, A. (Eds.), The Archaeology of Difference: Negotiating Cross-Cultural Engagements in Oceania. Routledge, London, pp. 1–31.

Trigger, B.G., 1981. Archaeology and the ethnographic present. Anthropologica 23, 3–17.

Wallerstein, I., 1974. The Modern World System. Academic Press, San Diego.

Weisler, M., 1990. Sources and sourcing of volcanic glass in Hawaii: implications for exchange studies. Archaeology in Oceania 25, 16–23.

Weisler, M., 1993. Provenance studies of Polynesian basalt adze material: a review and suggestions for improving regional data bases. Asian Perspectives 32, 61–83.

Weisler, M., 1998. Hard evidence for prehistoric interaction in Polynesia. Current Anthropology 39, 521–532.

White, J.P., 1996. Rocks in the head: thinking about the distribution of obsidian in Near Oceania. In: Davidson, J., Irwin, G., Leach, F., Pawley, A., Brown, D. (Eds.), Oceanic Culture History: Essays in Honour of Roger Green. New Zealand Journal of Archaeology, pp. 199–209.

White, J.P., Jacobsen, H., Kewibu, V., Doelman, T., 2006. Obsidian traffic in the southeast Papuan Islands. Journal of Island and Coastal Archaeology 1, 101–108.

Wickler, S., 2002a. Oral traditions and archeology: modeling village settlement in Palau, Micronesia. Micronesian Journal of the Humanities and Social Sciences 1, 39–47.

Wickler, S., 2002b. Terraces and villages: transformations of the cultural landscape in Palau. In: Ladefoged, T., Graves, M. (Eds.), Pacific Landscapes: Archaeological Approaches in Oceania. University of Hawaii Press, Honolulu, pp. 63–96.