Sedentism, subsistence and socio-political organization in prehistoric New Zealand

Richard Walter, Ian Smith and Chris Jacomb

Abstract

Much archaeological thinking about the interrelationships between subsistence, sedentism and socio-political organization has been carried out within an evolutionary framework. The classic model sees the development of complex social organization linked to a rise in the importance of agriculture and of a sedentary way of life. The New Zealand record offers challenges to this model. New Zealand is an unusual case involving a society moving from an agricultural to a predominantly hunting and gathering base and then, following large-scale faunal depletions, back towards agriculture. Despite these marked changes in subsistence practices there is little evidence in the archaeological or ethnographic record for any substantial alterations in patterns of mobility, sedentism or socio-political organization over the full duration of the New Zealand sequence. In the New Zealand case, cultural traditions inherited from tropical East Polynesia are shown to have been more influential than economics in determining the nature of Maori settlement and social organization.

Keywords

Maori; socio-political organization; subsistence; mobility; New Zealand.

Introduction

Archaeologists have long been conscious of the role of mobility in structuring human social, economic and cultural relations. The move from mobility to sedentism at the end of the last ice age for example is said to have precipitated changes in production, demographics, technology, socio-political organization, cultural practice and ideology that reconstructed humans as a fully domesticated species (Wilson 1988). This paper explores the relationships between mobility patterns, socio-political organization and subsistence practices in relation to archaeological evidence of Polynesian culture change in New Zealand. It shows that, while the New Zealand record conforms in general to standard

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models linking these variables, certain key cultural traditions lent a level of persistence to patterns of socio-political organization and mobility in spite of major changes in environment, ecology and subsistence, both in the move from tropical Polynesia and during the course of New Zealand prehistory.

New Zealand was settled about 700 years ago by colonists travelling in large double-hulled sailing canoes from a tropical East Polynesian homeland or 'Hawaiiki'. In the relatively short time between first Polynesian landfall and European contact in the late eighteenth century there has been significant variation and many changes in ecology, modes of production, material culture and size and density of populations. Some archaeologists have argued that culture change in New Zealand mirrored general trends observed elsewhere in the world, that Maori society passed from small-scale mobile bands engaged in hunting, gathering and fishing, through to ranked chiefdoms with sedentary economies based on intensive horticultural production (e.g. Green 1963). While Green has abandoned this view, versions of it remain implicit in much New Zealand archaeology. Others focused more on environmental factors where variations in mobility, production and socio-political structures were linked to local or regional conditions, which were themselves subject to both natural and anthropogenic change (Anderson 1983; Groube 1964). In fact, New Zealand archaeology exhibits both general trends, in which the relationships between mobility, subsistence and socio-political organization trace familiar grounds, as well as strong patterns of long-term continuity that cross-cut these trends. The complex interaction between these processes of change and continuity moved Marshall to comment that the 'story of changing Maori social organisation takes its place as both a key critique of evolutionary theory, and a unique and fascinating story in its own right' (2004: 64).

Maori society developed in New Zealand, but has its roots in the tropical islands of East Polynesia. These islands were not just the source of the colonizing canoes, they were the places where the fundamental structures of Maori society developed (Walter 2004). Any long-term historical study of change in community mobility patterns and social organization in New Zealand, therefore, must begin with an understanding of how these variables operated in the homeland societies that gave rise to the first settlers.

The East Polynesian background

The particular islands of origin are not known but we can identify a 'homeland' or 'Hawaiiki' (Walter 1994) zone and time period when New Zealand was most likely settled. This comprises the southern Cook Islands, Austral Islands and Society Islands around the late thirteenth century AD (Walter 1994; Higham and Jones 2004). The archaeological record from the southern Cook Islands provides the most appropriate model for homeland society (Fig. 1).

The eight widely scattered islands of the southern Cooks are made up of high volcanic islands, atolls and raised coral islands. Six islands have received archaeological attention and, drawing on this work, Walter (1996a, 1996b, 1998, 2004) has developed a basic synthesis of settlement patterns, mobility and social organization at about the time of New Zealand's colonization.

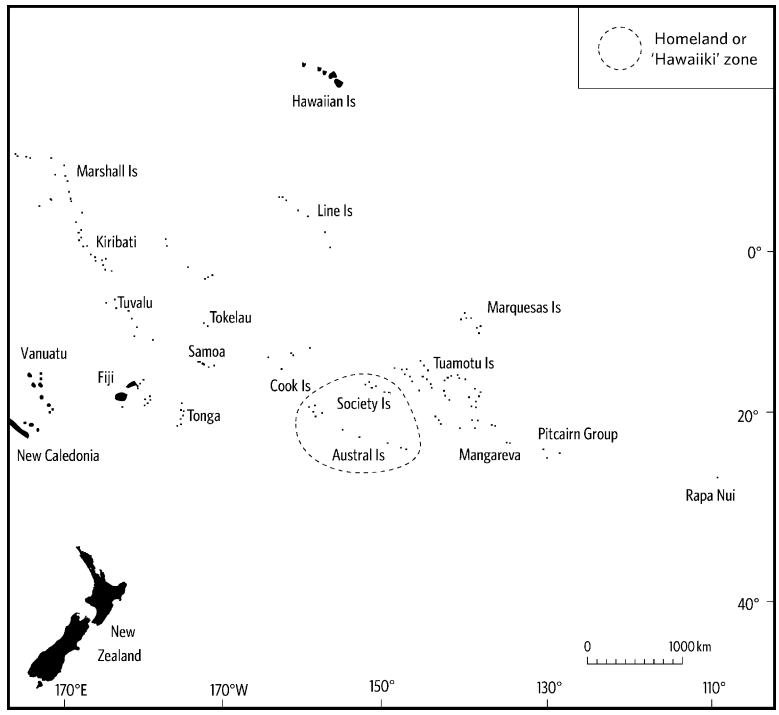

Figure 1 Map showing New Zealand in relation to East Polynesian Hawaiiki zone.

The main residential site type in Hawaiiki was a village containing the domestic structures and work areas of community members. Each was located on a reef passage along the sheltered leeward coastlines where access to the reef edge and offshore fishing zones, and the external communication routes, was maximized (Walter 1996b, 2004). Other site types include small specialist sites for fishing or the hunting of forest birds (Steadman and Kirch 1990; Kirch et al. 1995). Midden data indicate an economy reliant on inshore fishing, low-level exploitation of sea and forest birds and the husbandry of pig, dog and chicken, while horticulture is implied by the material culture. None of the villages appears to have been occupied for more than a few decades and they were probably shifted intermittently within the wider community territory, including from island to island, as resource availability fluctuated. These sedentary villages of relatively short duration were supported by high levels of logistical mobility. The gardens were located at least a kilometre from the villages, and the territories within which fishing, hunting and gathering were carried out would have been extensive, probably encompassing adjacent islands and thus involving up to several days' travel. Long-distance mobility is also evidenced by the importation of industrial material. Basalt from sources on Rarotonga, Atiu and Mangaia (Fig. 2) has been found in early sites throughout the southern Cook Islands and every site had access to pearl shell (*Pinctada margaritifera*) which was brought hundreds of kilometres from the northern Cook Islands. Extra-archipelago items including basalt from Samoan and Society Island sources also appear in several of the sites (Weisler and Kirch 1996; Walter and Sheppard 1996, 2001; Allen 1997). Whatever the mode whereby these

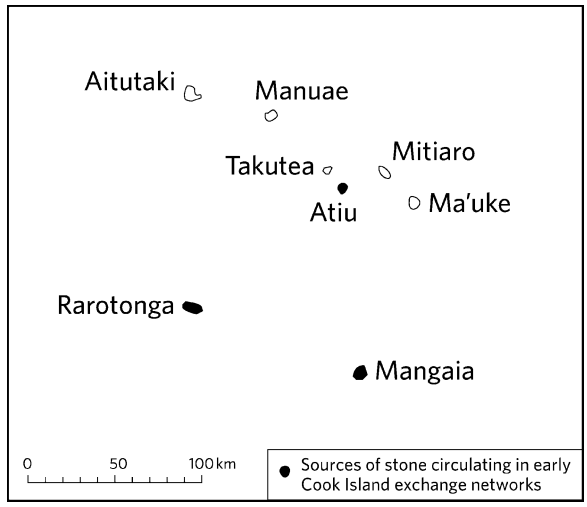

Figure 2 Map showing islands of the southern Cook Islands.

materials were distributed, it is clear that communication networks spanned the archipelago and beyond, and that these networks facilitated the movement of the highest quality raw materials throughout the southern Cook group.

A number of inferences regarding socio-political organization can be drawn from the archaeology of Anai'o, a fourteenth-century AD site on Ma'uke (Walter 1993, 1996b, 1998). The Anai'o structures are quadrangular in plan and include examples of dwellings and cooking shelters. Manufacturing zones were concentrated around the cooking areas and the outside walls of the dwellings, and one structure was identified as the residence of a stone-working specialist (Walter 1996b). Intra-site patterning suggests that the household unit was the basic unit of production and labour (Walter 1996b, 2004). The household unit is likely to be equivalent to the Austronesian house-based kin group and the larger social unit, the village community, equivalent to the Ancestral Polynesian concept of 'kainanga', a 'land holding group tracing descent from a common ancestor' (Kirch and Green 2001: 213). Chiefs were almost certainly present at this point in Polynesian prehistory (Kirch and Green 2001) although this is difficult to demonstrate in the archaeology. Chiefs are implied by the ability of these communities to undertake oceanic exploration and colonization. However, while long-distance voyaging implies central organization it does not necessarily imply a highly stratified society. Polynesian socio-political systems allow for small communities to draw together to undertake corporate activities without the necessity of a high chief supported by a formal administrative structure.

Current models in New Zealand archaeology

Currently there are no New Zealand-wide models that link sedentism, subsistence and socio-political organization. The overview assembled here draws on a range of current thinking and a generally accepted chronological model.

Material culture shows marked temporal change, allowing the prehistoric sequence to be divided into two periods (Golson 1959). The early period, beginning about 1250–1300 AD (Higham and Jones 2004), was characterized by a recognizably East Polynesian assemblage, termed 'Archaic', that included large, quadrangular, flaked and polished adzes, elaborate personal ornaments and one-piece fish hooks. At European contact in the late eighteenth century nephrite tools were in more common use. The non-nephrite adzes of the later period were smaller and more rounded in section and there was a different range of ornaments, many also made from nephrite. Two-piece fish hooks replaced the one-piece hooks of the earlier assemblage. The timing of the transition between the early and later periods is poorly understood, but at Moncks Cave in the South Island many of the Archaic forms had been replaced by recognizably Classic forms by the mid-fifteenth century AD (Holdaway and Jacomb 2000).

The best-known early settlements were located near clusters of big game. Fur seals occurred on nearly all coasts (Smith 2005), while moas (Dinornithiformes, several species of large flightless birds endemic to New Zealand and now extinct), although present in parts of the North Island, were concentrated in the eastern South Island (Anderson 1989). In the latter region the largest early settlements were located at the mouths of major rivers and include Wairau Bar, Redcliffs, Rakaia Mouth and Shag River Mouth (Fig. 3). Houhora and Kaupokonui in the North Island have similar characteristics, but other sites of comparable age, such as Sarah's Gully and Washpool had few if any large game animals, and throughout the country there were also smaller camp sites. Hunting of seals and moas was the primary subsistence strategy in early southern New Zealand (Anderson 1982; Smith 2004), and older models of prehistory characterized the 'moa hunters' as mobile bands of hunter-gatherers, while in the north, where moa densities were lower, this economic pattern was presumed to have been sustained by fishing and shellfishing. Subsequent research showed that early northern communities supplemented their economies with horticulture, particularly *kumara* (sweet potato, *Ipomoea batatas*) production (Leach 1979), but Polynesian cultigens could be grown successfully only north of Banks Peninsula and southern communities relied solely on hunting and gathering. Despite this, the most recent assessments of southern region settlement patterns propose that they were based around permanently occupied villages (Anderson and Smith 1996a, 1996b; Smith 1999).

Big game disappeared rapidly. Fur seals were extirpated from northern regions within 200 years (Smith 2005) and moa were extinct perhaps only 50–150 years after colonization (Holdaway and Jacomb 2000), leaving fish, shellfish, small birds and dogs as the primary sources of meat (Smith 2004). Only in the optimal parts of the northern horticulture zones such as the Bay of Islands, Auckland and Bay of Plenty was *kumara* production more than a supplement to an economy heavily reliant on wild foods, with the bracken fern (*Pteridium esculentum*) rhizome the most important wild plant food of the later period.

There were fewer and smaller sites in the south following the demise of big game. Population grew more rapidly in the north, and there was more use of the interior than previously, although the focus of later settlement remained predominantly coastal. The most common sites were undefended 'open settlements' consisting of a cluster of house terraces, often associated with midden and, in horticultural areas, storage pits and garden soils. Specialized fishing and shellfish gathering camps and stone working sites have also been identified. The most distinctive later period sites are fortifications or *pa*, which first

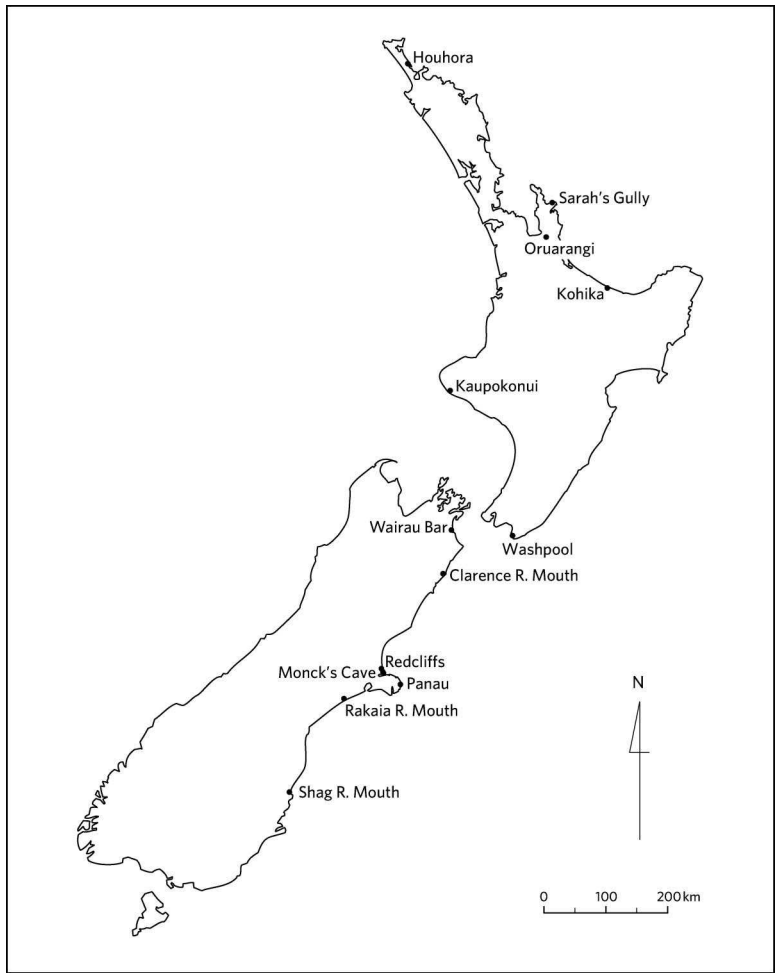

Figure 3 Map showing New Zealand sites mentioned in text.

appear about 1500 AD (Schmidt 1996) and are concentrated in the northern parts of the country. These sites were located in defendable positions such as headlands, hill tops, ridges or swamps and typically comprised defensive ditches and banks that enclosed a number of storage pits and house terraces.

Various interpretations of change in socio-political complexity have been proffered. In older models, a presumed move from hunter-gatherer to horticultural subsistence was seen to underpin changes from a simpler to a more complex society. While economic transition of this form is no longer envisaged, the presumption of increasing social complexity has been persistent (Sutton 1990; Allen, M. W. 1996). However, as Marshall (2004: 67–8) has shown, some other interpretations suggest simplification in social structures through at least part of the prehistoric sequence. These differences rest in part on varying interpretations of the implications for social organization of mobility in settlement patterns, but also on what can be inferred from the presence or absence of various artefact forms and the significance of the emergence of *pa*. We consider these issues further below.

The archaeological data

Archaeological indicators of sedentism have been discussed in the world literature (see Kelly 1992) and some of these are relevant in New Zealand. Sedentary sites are places where most of the everyday domestic tasks of community life take place and as such should display a full range of artefact types and activity areas. The spatial patterning of these features will be non-random, reflecting instead the social rules and practices governing community life. Structures are likely to be larger and more robust in sedentary as opposed to temporary sites.

Mobility is inferred for single-activity-focused sites since these are often temporary or seasonal components of wider settlement-subsistence systems. In New Zealand such sites include fishing, shellfish gathering, gardening, hunting or butchery camps, rock-art sites and stone-working or extraction sites. Mobility of another sort is implied by the presence in sites of materials or goods from distant sources, although it is often difficult to determine the social mechanism by which these items were transported, and their presence in sites does not necessarily mean that the occupants of those sites were themselves actively involved in their procurement.

The current model for mobility patterns in the early period comes from southern New Zealand where Anderson and Smith (1996a, 1996b) have proposed the 'transient village' as the main residential site type. These villages display all the main indicators of sedentism such as a full range of artefact forms, including personal ornaments, domestic structures (although few have been well defined), burials, manufacturing activities and food-processing areas. Transient villages were located in places where there were rich concentrations of meat, particularly seals and moas, and their economies were based on hunting and gathering. As the rich meat sources were depleted, perhaps after only a few decades, the transient villages were relocated to the next prime area. Although the transient village was a sedentary site type, it was part of a settlement system that incorporated mobility. Within the larger territory of exploitation, smaller restricted-function and specialist sites used mainly for hunting, gathering and stone quarrying were occupied from time to time by community members (Smith 1999). The villages also contain a range of long-distance imported raw materials including argillites from the northern South Island and obsidian from the North Island. Whether these represent direct procurement, down-the-line movement, long-distance trade or something else, they demonstrate that mobility of key resources was a crucial feature of the cultural landscape in which these sites were located.

This model of the transient village was developed for the environment and subsistence modes of early southern New Zealand with its hunting, fishing and gathering economy. We consider that essential elements of the transient village way of life were more widespread in New Zealand, despite a lesser emphasis on big game hunting. In the North Island, Houhora has been identified as a possible example (Furey 2002). Although midden from this site suggests a fishing and hunting economy, it is probable that there was a horticultural component as well. The latter is clearly evidenced at Sarah's Gully (Davidson 1984: 166–7) and at the Washpool site (Leach and Leach 1979), which, although smaller than some other villages, still represents the diverse range of activities expected of sedentary settlements. Since the horticultural zone extends as far south as Banks Peninsula on the South Island's east coast, it is possible that many of the early southern sites within

this zone – including Wairau Bar, the type site for the Archaic phase (Golson 1959) – also had a horticultural component. There is little direct evidence for this however, except at the Clarence River Mouth site where agricultural features have been reported (Trotter and McCulloch 1979).

Patterns of mobility and sedentism have been more difficult to reconstruct from the archaeological data of the later period, but most models involve residence in base settlements (varying from small hamlets to fortifications) with regular travel to exploit resources, some of which were seasonal, or for social reasons (Groube 1964; Davidson 1984: 166; Anderson 1998; Phillips 2000: 167–8). Sites that probably represent sedentary villages include Oruarangi (Furey 1996) and Kohika (Irwin 2004) in the North Island and Panau (Jacomb 2000) in the South Island. The economy of these sites was based on fishing, marine and terrestrial foraging and horticulture. Although the artefacts in these sites reflect the Classic, rather than Archaic phase, their functional diversity along with the range of activities and structures in the sites is very similar to that of the early villages.

These archaeological reconstructions are remarkably consistent with the model of contact period settlement patterns derived from historical records, notably those of Captain James Cook (Groube 1964). Such records emphasize the dispersed and small-scale nature of settlements. The usual residential unit described by early visitors comprised a cluster of huts or small houses, although in the north *pa* were occupied periodically, including at times of threat and, in some cases, perhaps on a more-or-less permanent basis. The communities that occupied these settlements, which have been variously described as villages, hamlets or base camps, comprised a small number of extended families averaging a few dozen people, in short a clan or sub-tribe (in Maori, a *hapu*). *Hapu* members would move residence within their territory to seek particular resources, and might be joined periodically by other related *hapu* and thus community size would fluctuate. Some movements were governed by seasonal resource cycles but communities would also relocate every few years as local garden soils became depleted or stands of bracken fern were exhausted (Groube 1964). Mobility patterns and community size varied enormously according to circumstance and geographic context; individuals or small groups might temporarily move away from the primary settlement for specific tasks, or several *hapu* might join together, to construct a fortification or engage in warfare. In some cases, such as in the Bay of Islands, communities moved between semi-permanent bases according to season. In Queen Charlotte Sound, on the other hand, where horticulture was possible but not, apparently, practised, Cook's observations of Maori fishing and gathering suggest an 'extremely mobile, semi-nomadic way of life' (Groube 1964).

This brief review of New Zealand's archaeological record shows marked regional and chronological consistency in sedentism and mobility. On this basis we argue that the transient village concept can be applied to the horticultural zone as well as to the south, and that aspects of it persisted for the full prehistoric sequence. Key elements of the settlement model that we propose are as follows:

1. Sedentary villages or hamlets were the basic unit of settlement for all of New Zealand prehistory (see also Davidson 1984: 166).
2. These villages were components of settlement-subsistence systems which involved high levels of mobility relating to food procurement.

3. The village sites were transient; they were regularly relocated as major resource zones were depleted or as a result of political contingencies. Most had occupation durations of no more than a few years although some were occupied for decades. Many sites were reoccupied.
4. The population structures of the villages fluctuated constantly as a result of 'fission and fusion' (Anderson and Smith 1996b) processes.
5. Communities were mostly self-contained economically and socially, but they were part of a wider landscape of high mobility, as reflected in the long distance movement of raw materials for example.

The transient village way of life is identical in many ways to the early East Polynesian villages of the southern Cook Islands and the model was probably brought from there with the first settlers. Like their New Zealand counterparts, the East Polynesian villages were located in optimal zones and comprised a sedentary residential area which was occupied for no more than a few decades. And, as in New Zealand, they were part of a settlement-subsistence system where procurement activities took place over a wide territory, and residents had access to raw materials from distant sources. The only substantial difference between the East Polynesian and New Zealand villages lies in their subsistence base: in the tropics fishing, horticulture and animal husbandry; in northern New Zealand fishing, marine and terrestrial hunting and gathering, and, to a greater or lesser extent, horticulture; and in southern New Zealand fishing, marine and terrestrial hunting and gathering. In southern New Zealand transient villages may have disappeared briefly with the depletion of big game, but they had re-emerged by the contact period (Anderson and Smith 1996a). In other words the basic pattern of sedentism and mobility seen throughout the prehistoric sequence in New Zealand was introduced from East Polynesia, and its continuity, despite differing ecological and economic conditions, points strongly towards persistence in settlement patterns and social organization.

Socio-political organization is one of the most difficult aspects of prehistoric life to reconstruct from archaeological data. Kirch (1984) and Kirch and Green (1987: 2001) have argued convincingly on a variety of grounds that ranking and political hierarchy were present in Ancestral Polynesian Society some 3000 years ago. Descendant Polynesian societies inherited these political characteristics, although in forms mediated by the contingencies of local environments and history. We can accept as a given that Maori societies have always had chiefs and that the power and authority of these individuals derived from a combination of achieved and ascribed status, the latter negotiated through genealogy (*whakapapa*) with emphasis on primogeniture and the primacy of the male line (Goldman 1970). The questions that remain are: how ranked were pre-European Maori societies? How much political hierarchy was present? And were there any changes in these features through time? There are a number of standard indicators that archaeologists use to identify cases of ranking or political hierarchy in the archaeological record and some of these are appropriate to the New Zealand situation (Table 1).

Archaic assemblages contain a range of artefact types that are likely to fall into the category of high-status goods. Among the most distinctive of these are the large 'reel' and imitation whale-tooth necklaces that have been recovered from burials at Wairau Bar and other Archaic sites, and which have also been found in similar-aged sites in East Polynesia

Table 1 Some potential indicators of political hierarchy or rank in New Zealand archaeology

Material culture	Presence or absence of high-status goods, artefacts displaying unusually high technological sophistication, presence of long-distance imported materials, weapons
Spatial patterning	Spatial associations of 'high value' artefacts and imported goods, differential treatment of the dead, presence and types of grave goods, size and layout of structures
Site types	Monumental architecture

(Davidson 1984; Walter 1996a). Equally impressive are the large adzes, again often found with Archaic burials, that are too large to have been used easily and show little sign of having been used at all. While the possibility must be allowed for that these were all for ceremonial purposes, their presence in some but not all burials implies an association with rank. There are many other artefact classes that are occasionally represented in unusually large or elaborate forms that suggest they were not fashioned as normal working implements.

The Classic assemblage also contains a number of forms that are good candidates for a high-status ascription. Included here are large sperm-whale ivory neck pendants (*rei-puta*), neck pendants made in nephrite in a stylized human form (*hei tiki*) and a wide variety of neck and ear ornaments made of nephrite and other materials (e.g. Davidson 1984).

Technological sophistication is sometimes used to argue for a higher degree of socio-political complexity. It may not be a valid measure in all cases, particularly in the context of such a short time-scale as that of New Zealand. In any case it would be difficult to argue for any significant differences in technological sophistication between Archaic and Classic. The wide range of wood-working tools present in the Archaic (Smith and Leach 1996), combined with the ability to use such tools to construct ocean-voyaging vessels (Best 1977), demonstrates clearly that a high degree of sophistication was present with the first arrivals. Too little is known about the actual carvings that might have been made in the Archaic to say anything about carving styles, but there is no reason to assume that there was any difference in technical ability or sophistication. The Archaic adzes in basalt and argillite include the finest made and most elaborate examples in the sequence. These adzes and the high-quality stone sources that were used to make them passed out of widespread use by the Classic. However, by that time different but equally elaborate and technologically sophisticated adzes made of nephrite were in widespread use.

It has already been noted that both Archaic and Classic assemblages regularly contain stone tools from distant sources. While there appear to have been changes through time in the lithics being moved, few notable differences in the incidence of long-distance trade have been observed (Leach 1978; Sheppard 2004). Similarly, there is little to suggest that weapons were more common in one period rather than the other. Although very few have been recovered from secure archaeological contexts, the hand club (*patu*), which was well described during the contact period, has been identified in East Polynesian sites dating to the time of New Zealand settlement, and was almost certainly part of the Archaic kit in New Zealand.

Burials from both early and late periods include possible evidence of rank in the form and distribution of grave goods. At the early site of Wairau Bar about thirty of the thirty-nine burials contained grave goods including such items as perforated moa eggs, personal ornaments and finely flaked adzes (Anderson 1989). From the Classic phase, two of the five burials at Panau (Jacomb 2000) and only a very few of the twenty-six burials at Oruarangi had grave goods (Furey 1996). While this might be interpreted as indicating an increase in socio-political complexity through time, the number of sites from either period with large enough samples of burials to show a pattern is insufficient to sustain an argument for a change either way in socio-political complexity based on grave goods.

Monumental architecture has long been associated with socio-political complexity. Such sites may directly indicate centralization and hierarchy through their association with such things as institutionalized religion or expansive warfare. But more generally it is assumed that the appearance of large and complex structures is an indication that certain individuals or groups have attained the means to control and direct the labour of others. As Earle (1997) argues, leaders can do this in a number of ways, the most common being through the manipulation of ideology, control over the production system or more directly through military might. In New Zealand the only site type that might be considered monumental is the *pa*. There are at least 6000 examples of this site type and as already noted they were all constructed at least 200 years after settlement, which might imply that there was increased political hierarchy and social stratification in the later period.

Pa vary considerably in size, ranging from only $25m^2$ to about $250{,}000m^2$, and in the nature and complexity of their defences and internal structures (Marshall 2004: 75–8). It is clear that not all had the same function, and that in certain cases this may have changed over time. Some were simply defended food stores (Law and Green 1972), others had occupation but no below-ground food storage (Hougaard 1971), while some were places of refuge constructed in anticipation of a possible attack and may never have been occupied (Davidson 1984: 185). A relatively small percentage may have been occupied more or less permanently, although, when large fortified sites have been investigated archaeologically, only parts appear to have been occupied at any one time (Sutton et al. 2003). It is also clear that not all *pa* were in use at once, Phillips (2000) suggesting that in her closely analysed study area only one in ten were occupied concurrently.

The variability of *pa* does raise questions about how well this site type fits the usual concept of monumental architecture. Nonetheless, construction of all but the very smallest would have required a substantial labour input. According to standard anthropological models this could imply centralized control over a labour force and, indeed, the largest *pa* are often associated with powerful chiefs. Many of the volcanic cone *pa* of Auckland, for example, are associated with the chief Kiwi who died in battle about 1750 (Ballara 1998: 99). But the standard models, in which institutions emerge that direct power and authority downward and channel tribute upward in the form of labour or production for example, do not seem to apply in New Zealand. While the oral histories talk of powerful chiefs, like Kiwi, they do not describe any mechanism that institutionalized that power. Kiwi's *hapu* group, Wai-o-Hua, had fluctuating successes in the regional politics of the northern North Island over a period of a century or so, but they were not a centralized political hierarchy (see Smith 1898; Ballara 1998: 98). The oral histories suggest that *pa* were constructed through the corporate effort of *hapu*, or groups of *hapu* that recognized a shared purpose.

In this way they are much more appropriately seen as a reflection of community solidarity than of the coercive power of chiefs (Phillips and Campbell 2004: 98), and hence do not necessarily imply advanced political stratification, and certainly not of the Polynesian chiefdom type that emerged in Tonga or Hawaii.

At a regional or landscape level, however, Irwin (1985) argued that in some circumstances *pa* construction might be associated with a higher degree of socio-political aggregation. He postulated the development in late prehistory at Pouto of a small number of large, central 'primate' *pa* out of a landscape of smaller *pa* associated with residential groups of extended family size. He suggested that the smaller *pa* were related to local, *hapu*-level affairs, and that the few larger *pa* were central places that brought Pouto communities together in relation to external political events. In other words, the smaller *pa* represented individual social groups but these communities could all combine into a larger group as circumstances dictated. It should be noted that this type of community aggregation is entirely compatible with the settlement pattern model offered above, and does not imply or require structurally entrenched political stratification. Irwin echoes the conclusions of others in saying that 'the pattern of social relationships and groupings in late prehistoric times was very variable and dynamic' (Irwin 1985: 113).

If *pa* building was not the result of increasing political stratification, what were the circumstances that led Maori communities to construct so many *pa*? Given that their defining characteristics are defensive, they are clearly a response to perceived threat. McGlone et al. (1994: 156–7) suggest that, in a landscape where mobile subsistence strategies were required, *pa* were simply places where the inhabitants who stayed behind could defend themselves if attacked. We too consider that mobility is crucial, but that *pa* were associated as much with distant resource zones and the parties who worked there as with those remaining at the residential base. The settlement pattern that we have proposed would almost always have had some members away from major residential areas at any time. With growing populations, particularly in northern regions, territorial or exploitation zones for communities would have overlapped and smaller groups would be put increasingly at risk of attack. Communities could minimize risk by constructing small 'satellite' *pa* adjacent to key specialized resource zones such as shellfish beds, gardening areas and fishing grounds, as well as larger fortifications at or near to their residential bases. Furthermore, because occupation at these bases and use of satellite resource zones was transitory, new *pa* were regularly under construction. In this view, *pa* are not so much a discrete monumental site type, unique to later prehistory, but are defended versions of, or adjuncts to, settlement forms that persisted throughout the prehistoric sequence.

In our view the archaeological evidence implies continuity, rather than change in socio-political organization. It is probably best to think of late prehistoric Maori society as made up of co-residential units usually comprising a group of related *hapu*, but sometimes only one *hapu*, who resided and worked together part of the time within a larger community under the leadership of a chief. These communities were fluid and dynamic, changing composition and size at regular intervals (Anderson 1980, 1996; Allen, H. 1996). Through the mechanism of *whakapapa,* groups of *hapu* or even larger communities could come together for specific tasks such as *pa* construction or warfare against an outside threat. But there were no hierarchical confederations, at least prior to the nineteenth century. Instead,

the normal model of political organization involved 'scattered, independent colonies of descendants over a wide extent of the country, interspersed with groups from other *iwi* and/or major *hapu*' (Ballara 1998: 194).

This model is consistent with Maori oral tradition and history, which often revolves around the stories of powerful chiefs whose acts established the political status of contemporary groups whose names were given to descendent *hapu* or groups thereof. These chiefs were usually born with rank, but they frequently became renowned and influential leaders through their personal charisma, skills and sense of mission. Maori society has always had mechanisms whereby leaders could arise and amass followers, perhaps for a lifetime, but often in pursuit of a single short-term goal. We suggest that it is this fluid, dynamic model, rather than a highly ranked, hierarchical chiefdom, that characterized socio-political organization throughout New Zealand's prehistory.

Conclusions

Archaeological thinking about the interrelationships of subsistence, sedentism and socio-political organization has generally been within an evolutionary context, concerned to explain the emergence of food production, village life and complex societies. Examination of these processes in diverse parts of the world has shown with general consistency that when hunter-gatherers became food producers they also became more sedentary and that more complex socio-political organization emerged (Wilson 1988). Examples of sedentism and ranked chiefdoms emerging among hunter-gatherers in resource-rich zones have illustrated that there were multiple pathways towards complexity, but they also served to emphasize the primacy of subsistence as the driving force in mediating the relationships between these variables. The New Zealand case is one of very few in which a sedentary, food-producing society colonized a region in which food production was either difficult or impossible. Thus the archaeological record of adaptation to this setting provides an important test of the primacy of subsistence.

The foregoing review of the New Zealand evidence discloses remarkable consistency in settlement pattern. Throughout the prehistoric sequence in both the horticultural north and hunter-gatherer south, sedentary villages or hamlets were the basic unit of settlement within a system that incorporated high levels of mobility relating to food procurement and long-distance movement of raw materials. This pattern of settlement had been introduced from East Polynesia and, although modified in some ways by the vastly greater scale of the New Zealand landscape and the broader regional territories needed to sustain it, it persisted. Socio-political organization also changed little throughout the prehistoric sequence. Ancestral Polynesian society was stratified and had hereditary chiefs, and potential indicators of rank are present in the New Zealand archaeological record. But none of these shows any clear evidence of either increase or decrease over time. The persistence of these patterns of settlement and socio-political organization, despite significant changes in subsistence practice, indicates that the latter has not always determined the character of the former.

Modern archaeology is often more concerned with explaining change than continuity. This is certainly the case in New Zealand where little attention has been given to examining

continuity in cultural expression from the island homeland. The concept of 'tradition' has recently been revived by Sheppard and Walter (n.d.) as a way of explaining continuity in the archaeology of the Western Solomon Islands. Connecting 'tradition' to the concept of 'foundational schema', a term introduced by Shore (1996: 53) to describe sets of mental constructs linking models of culture, they show how patterns of cultural coherence can be imposed across regions infused by diversity in language and other cultural behaviours. In the same way, the East Polynesian settlers brought with them abstract models of culture and it is the persistence of these models that explains why patterns of continuity in settlement and socio-political organization were replicated across societies that differed markedly in ecological setting, demographics and subsistence practices.

Anthropology Department, University of Otago, Dunedin, New Zealand

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Richard Walter is an associate professor of archaeology at the University of Otago. His doctoral dissertation was on the prehistory of the southern Cook Islands. His research has focused on the prehistory and archaeology of Oceania with a special interest in Melanesia and Polynesia, material culture studies and the history of archaeological method and theory.

Ian Smith is an associate professor of archaeology at the University of Otago. His PhD examined the effects of human hunting on New Zealand's pre-European marine mammal populations. His research interests are primarily in New Zealand prehistory, and include faunal analysis, historical archaeology and archaeological methods.

Chris Jacomb is a research fellow in archaeology at the University of Otago and a regional archaeologist with the New Zealand Historic Places Trust. His research focuses on New Zealand and includes material culture analysis, chronology of change and historical archaeology.