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Settlement Pattern Studies in Oceania: An Introduction to a Symposium

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ABSTRACT

A brief overview of settlement pattern studies in Oceania during the 1970s is provided as the background for and introduction to a symposium on the subject at the 15th Pacific Science Congress in Dunedin, New Zealand. The general situations in Polynesia, Melanesia and Micronesia are outlined and evaluated separately as a context for the papers.

Keywords: SETTLEMENT PATTERNS, OCEANIA, POLYNESIA, MELANESIA, MICRONESIA.

INTRODUCTION

A symposium entitled "Settlement pattern archaeology in the Pacific" which I organised for the 15th Pacific Science Congress in Dunedin, New Zealand, in February 1983 included 19 papers, 7 from Polynesia, 3 from Melanesia, and 6 from Micronesia together with one on climatic factors, a general one on the development of complex societies in the area and my overview of work on the topic in the last decade. The following is an abbreviated version of that introductory paper designed to provide a context for the selection of papers from the symposium to be published in the *Journal*.

In a general review paper on spatial information in archaeology, David Clarke (1977:1) wrote: "The major claim will be that the retrieval of archaeological information from various kinds of spatial relationship is a central aspect of the international discipline of archaeology and a major part of the theory of that discipline wherever it is practised". Both he, and earlier Willey (1968) in respect of settlement pattern studies, have argued that spatial studies in archaeology are *not more* important than other objectives, but merely that it was time that the major role of archaeological spatial information was recognised and its concepts and problems explicitly investigated and systematised.

People like Willey (1956), Trigger (1967), Chang (1972), Parsons (1972), and Clarke (1977) have noted that in all too many instances, analyses of the settlement pattern type or of spatial information in archaeology tend at best to be secondary aspects of studies devoted to other objectives. Studies which focus specifically or largely on spatial information and its analysis and manipulation within a conceptual framework devoted mainly to the understanding of that dimension alone are relatively few in number. Clarke (1977:5) also noted such studies tend to be dispersed, disaggregated, and dissipated. By "dispersed" he meant they were not integrated regionally and lacked well developed cross-cultural comparisons; by "disaggregated" he referred to the fact that they tended to select one method or another and one time interval or another for analysis; while by "dissipated" he wished to indicate the poor state of communication on the subject between various schools of archaeology and the often parochial concentration on a region rather than a concern with a more general approach throughout archaeology.

In reviewing the Oceanic literature on studies which have the manipulation of spatial information either as their *main concern* or as a *major secondary objective*, I have found that most of the above comments are supported. Studies which have the analysis

of settlement patterns or spatial information as their main focus are relatively few in number, while there are numbers of studies which have it as one of several major concerns or as a principal secondary objective. As one colleague remarked when I was organising this symposium – “Settlement pattern analysis in the Pacific? I thought that went out in the early 70s”. Both a review of the literature of the 1970s and 17 papers in the symposium, I believe, show that this is not the case. Rather, such studies have continued throughout the last decade as one, though by no means a predominant one, of the research strategies being employed in the Oceanic region.

Settlement pattern studies in Oceania had their source in the American archaeological tradition of the late 1950s and early 1960s and their focus in the Polynesian region. In the Oceanic region in the 1960s, and especially in Polynesia, the settlement pattern approach thus enjoyed some prominence as one of the more useful strategies for the recovery and organisation of archaeological data in what was then a newly emerging field of study. In short, they offered one of the few alternatives to the “origins” and “island sequence building” efforts of that decade (Kirch 1982). Polynesian settlement pattern contributions in that decade were reviewed by Green (1967, 1970) and incorporated by Parsons (1972) in a more general and global overview of archaeological settlement pattern analyses. Further developments in the Polynesian region in the mid-70s were included in Bellwood’s (1979) summary of the subject.

POLYNESIA

Two aspects of the trends in the 1970s and early 1980s in the Polynesian region seem to stand out. One is the increasing influence of various theoretical, analytical, and methodological approaches with a source in other archaeological schools, especially in the British school of spatial archaeology identified by Clarke (1977:2) with developments in the New Geography. The other is the close tie which has grown up between settlement archaeology and contract archaeology or cultural resource management, especially where the latter has fostered extensive site survey, particularly in the more economically-developed centres of New Zealand and Hawaii, but also in Easter Island and French Polynesia.

To back up these statements, let me briefly mention studies in some way featuring settlement archaeology, which have been done in Polynesia (including Fiji) in the last decade (i.e. since about 1970).

In Fiji, the principal work has been done in the Rewa River Delta area by Parry (1977, 1978, 1979). It built on earlier work by Bruce Palmer on fortifications and their distribution in Fiji, but it added several new dimensions. First, it was done by a geographer, not an archaeologist, and second, it primarily used techniques of panchromatic, infra-red, and colour photography. Also, it took into account not only the pre-European ring-ditch fortifications, but also the associated taro gardens and subsistence systems of that area. It is the best published example I know of to date of the use of remote sensing techniques in the settlement pattern field, although examples from New Zealand (Palliser Bay, Wiri, Kawarau), and Hawaii (Waimea-Kawaihae, Lapakahi-Kohala) could also be cited. The study details the intimate relationship between environmental factors (soil types, parent material, drainage, land form) and site distribution and size. More such work by Parry is presented in this issue.

In Samoa, a settlement pattern study in the Mt. ‘Olo area at the Mulifanua end of Upolu featured as one major objective among several in the University of Utah’s project in Western Samoa (Jennings and Holmer 1980). Here large scale intensive mapping using plane tables was the principal means of data recording, with selected excavation in specific structures to establish temporal control and assist functional

interpretation. As a result, a settlement pattern analysis with a time depth over the last 600 to 700 years of Samoan prehistory has been more securely established than in the work of Green and Davidson in the 1960s. An implicit concept in the earlier work, the definition of the household unit, was given far more explicit and empirical formulation in this analysis. Indications of status and ranking among communities, and their definition within communities, wards or social units was also attempted. The articulation of these with trails and pathways was also greatly elaborated. Finally the conclusions of Davidson (1974), about the nature of inland settlement and settlement distribution were further supported. Thus for Western Samoa (in contrast for example to Tonga), there is abundant data on settlement patterns and some interpretation in terms of social organisation for the last 600 to 700 years, with the changes in the period of European contact able to be outlined, in terms of both continuities and discontinuities (Jennings *et al.* 1982).

For the rest of West Polynesia, we have some new data on Futuna, on Niuatoputapu in Tonga, on American Samoa and on Niue. However, none of it is as extensive or as well analysed and published as that from Western Samoa. While the Western Samoa settlement data stands out in this respect, its integration with subsistence data, which in general was not much recovered, is poor. Also, settlement data from the first 2000 years of Samoan prehistory is almost entirely lacking, as it is throughout Western Polynesia.

In Eastern Polynesia, settlement pattern analysis has been a major aspect of Bellwood's (1972) work in the Hanatekua Valley of Hiva Oa in the Marquesas, and one aspect of his (1978a) work in several islands of the Cook Islands Group. Bellwood's Marquesan study documents a less complex structural and social situation than that described by Kellum-Ottino (1971) for the Hane Valley in Uahuka. The best information from the Cook Islands (Bellwood 1978a) has contributed to a better understanding of site and settlement distribution on the island of Rarotonga in the late period and on the island of Tongareva (Penrhyn). Settlement pattern studies in the Society Islands have lagged since the investigations done by Garanger, Green, and associates in the 1960s. However, Sinoto's (1979) work on the early Vaito'otia-Fa'ahia wet site on Huahine has provided some invaluable information on activity areas and spatial distribution of structures and artefacts within an early settlement in that island group, although such concerns have been a secondary objective within the overall programme. Recently, however, as was reported in the symposium, Sinoto has initiated an intensive site survey on Mata'ire'a Hill on Huahine in the Leeward Islands which is providing data of a comparable kind to that gathered in the 1960s from the Windward Islands.

The major East Polynesian study of the 1970s with an explicitly formulated settlement pattern objective is that of McCoy (1976) for Easter Island. Here again a household unit cluster has been identified as a basic social unit, which occurs in various combinations with religious monuments and other structures to form the principal components of the settlement system including gardens. While the relation between structures and their overall distribution was the principal feature of this study, and documents the changes in relation to landscape degradation toward the end of the Easter Island sequence, the relationship of structures to portable artefacts reported to the symposium has only recently been recognised by McCoy. Again, while the changes in the settlement pattern data for the late end of the prehistoric sequence and the ethnohistoric period have been documented by this study, the earlier nature of settlement and spatial arrangements in Easter Island society is at present unknown. All we have for the whole sequence is a continuous series of structural changes in the principal religious monuments, the stone *ahu*. Cultural resource management

considerations, however, are underwriting the continuation of intensive site surveying on the island, and thus extending the possibilities for additional settlement pattern analyses, as is witnessed in the recently published Atlas by Cristino *et al.* (1981).

Cordy (1975:11-22) has sketched out the history of archaeological investigation in Hawaii, dividing it into a pre-1966 cultural historical-artefact oriented type of approach and a post-1966 settlement pattern approach. The latter he divides into an earlier set of settlement-subsistence studies (Makaha, South Halawa, Moanalua and Kahana on Oahu, Halawa on Molokai, and Lapakahi and Kaloko on Hawaii) and a later set of studies more concerned with settlement pattern and social organisation, of which his recent book (1981) on the central western Kohala coast of the main island of Hawaii may be singled out as a type example.

Despite having spent nine months in Hawaii recently, I find it extremely difficult to get an overview of the literature and the work which is taking place. This is because in Oceania the strongest link with cultural resource management requirements is to be found in Hawaii. As a consequence, a poorly published and distributed literature has accumulated, over which no-one seems to have very much control. What does seem evident is that a settlement-subsistence theoretical framework appears to dominate most such reports, in so far as they have any theoretical content at all, while studies which focus on social organisation in relation to data recovered are much fewer in number. However, despite Cordy's view that the latter is an advance on the former, both types of framework appear to be utilised, and there are some very productive new studies available for Makaha (Green 1980) on Oahu, Kaho'olawe (Hommon 1982), and Waimea-Kawaihae (Clark and Kirch 1983) on Hawaii, in addition to Cordy's investigations on Hawaii. The most recent is the work at Kawela on Moloka'i described in this symposium.

A host of studies which have included a settlement pattern orientation have appeared in New Zealand during the 1970s, beginning with Gorbey's (1970) study of pa distribution in New Zealand and Groube's (1970) paper on the origin and development of earthwork fortifications. These were followed by Fox's (1976) book on North Island prehistoric Maori fortifications and Brailsford's (1981) book on those of the South Island. More regionally oriented studies of pa distribution are now in train by Prickett in Taranaki (1980, 1982), McFadgen in the Bay of Plenty and Irwin in North Kaipara. The pattern of historic period European fortifications by Prickett (1981) in Taranaki has also been examined as part of a larger analysis of the sites of that period.

Using a different theoretical framework of site catchment and locational analysis, Cassels (1972a, 1972b) has examined the location of fortifications in the inland Waikato and midden and related sites on the Aotea coast. Moving down to the level of the site itself and its interior arrangements, Bellwood (1978b) examined through survey and excavation the within-settlement form of the swamp pa at Mangakaware and Law and Green (1972) the hilltop pa of Taniwha, both in the inland Waikato. In South Auckland the summit plan of an early stockaded pa is known (Fox and Green 1982). Fox (1978) in her work on Te Awanga pa in Hawkes Bay again revealed the interior organisation of the pa, and in her book (1976) on pa essayed a general chapter on the whole subject.

At the opposite end of the time scale, papers detailing some aspects of the interior settlement arrangements of early sites in New Zealand have appeared from Mt. Camel in the North (Roe 1969; Shawcross 1972), Tairua in the Coromandel (Jones 1973), Washpool in the Wairarapa (B. F. Leach 1979) and Hawksburn and other sites in the southern South Island (Anderson 1982, 1983).

One major programme with a wide range of concerns had as one of its main

secondary objectives the settlement pattern changes over time in a small region. This is the Wairarapa study of F. Leach, H. Leach and various of their colleagues (Leach and Leach 1979). It is one of the few to identify an early period series of communities—six or seven of them along that coast, and to work out from one of them a generalised model of how these communities operated in the seasonal round over the course of a year. It is also one of the few studies to identify a change in settlement pattern during a later period and to attempt to relate the two to various changes in the environment and social circumstances in the region. The programme is also one of the few I can discover in the literature to give close attention to a within-structure analysis. Here I refer to the study by Prickett (1979) of the Moikau house and its internal arrangements, both structural and artefactual.

More such data is currently being gathered by Sutton (1983) in a project in the inland Bay of Islands in Northland, and outside New Zealand on structures in Kawela in Hawaii. Passing reference is also made to the potential of such data in Tikopia (Kirch and Yen 1982: 128-131), but its potential in New Zealand and Polynesian settlement analyses is really only just beginning to emerge. Its exploration, where whole structures were dug in Tahiti or in Samoa, was really not attempted, and the strategy of within-structure analyses needs to be developed throughout Polynesia.

In sum, as stated at the beginning of this review of the Polynesian situation, settlement pattern and spatial studies during the 1970s have continued to develop and diversify, with the settlement-subsistence model of Struever (1971) being more common than the settlement-social organisation approach. The studies, however, exhibited all the disparate characteristics outlined by Clarke in his more global view of spatial archaeology in the 1970s.

MELANESIA

Turning to Melanesia, it is possible now to document the spread of a settlement pattern approach into that area in the 1970s, but the examples are not many considering the size of the region. Clearly other objectives have held prominence in most work done there to date.

Two early studies were Clay's (1972) analysis of the ethnohistoric and current situation on Cape Pinikindu, in New Ireland, and Irwin's (1973) study of village arrangements and spacing over the last 1000 years in the Shortland Islands. While Terrell (1977) would probably demur at the classification of his human biogeography approach in Bougainville under the settlement archaeology banner, it has a number of strong ties with spatial analysis in archaeology. In the Southeast Solomon Island Culture History project, the settlement pattern approach again featured as one among several secondary objectives. A late prehistoric to historic inland village study by Yen (1976) on the island of Nendö in the Santa Cruz group, a prehistoric dispersed community study by Swadling (1976) on Santa Ana, and one by Green (1976) in the Star Harbour area, together with the work of Hendren (1976) on the island of Ulawa, all have strong components of the settlement pattern approach in their framework and analysis. Bulmer (1978:62-73) has also incorporated elements of the settlement pattern approach into her study of the Port Moresby area. The most sophisticated spatial analysis in the Melanesian area, however, is probably that of Irwin (1977, 1978) in the Mailu area. Here various kinds of locational analysis and network theory were utilised to show the change, over the last 2000 years, in settlement arrangements along that part of the coast immediately adjacent to Mailu, and the emergence at the end of the sequence of Mailu Island and its community as the central place.

My overall impression of settlement pattern and spatial studies in Melanesia, including Fiji, is that in the 1970s and until now they have hardly caught on and, except for Irwin's and Parry's work, there has been little done where these concerns were a major focus of analysis. Spriggs's (1981) investigation on Aneityum, however, as was evident from his contribution to the symposium, had the approach as an implicit secondary consideration. Elsewhere, other objectives and strategies have been to the fore.

MICRONESIA

The situation in Micronesia is quite different to that in Melanesia and it has proven very difficult indeed to lay hands on the relevant literature. On the basis of recent summaries of work in Micronesia by Cordy (1980, 1982b), Takayama (1982) and Craib (1983), and from the number of papers with a Micronesian content contributed to the symposium, the impression is that studies which stress the spatial dimension in archaeological data have been a central concern in this area. The reason, I believe, is not far to seek. Much of the effort has been under the umbrella of a cultural resource management programme, in which excavation and time depth and sequence concerns have been few, with the bulk of the data recovered best lending itself to interpretation in a settlement pattern framework. Certainly some studies have had a largely research objective, such as Ayres and Haun's (1981) Awak Valley studies on Ponape. Ponape has also been the scene of such research by Bath (pers. comm.) in the inland Kiti area, and by Streck (pers. comm.) in the coastal Kiti area. Nan Madol, too, has received new attention (Athens 1980) as has the Lelū site in Kosrae (Cordy 1982a). In fact a large number of programmes in the Marshalls, Palau, Yap, and the Marianas all seem to have settlement pattern approaches as one component of their theoretical basis as the papers in the symposium demonstrated. The difficulty is that all the investigations are recent, many are not yet well published, and much of the literature which exists is hard to obtain.

CONCLUSION

In summary, it seems that the following may be said of settlement and spatial archaeological studies in Oceania at present. The approach is alive and well in Polynesia, and especially in Hawaii and New Zealand. It is also developing rapidly in Micronesia, but making little progress in Melanesia.

Studies at the level which Clarke (1977:11-15) calls the *micro* or within-structure level are few and more are badly needed. On the other hand, studies at the *semi-micro*, or within-settlement or community level are slowly developing. Activity areas based on artefact distribution as well as structural features are now being identified in sites all the way from early Lapita levels to the ethnohistoric period. Most focus, however, has been at the *macro* or between-site system. Here some success has been achieved again from Lapita to the present, with the best of the studies all centred on the late prehistoric to ethnohistoric boundary, and only a few carrying on into fully historic contexts.

Taking another dimension identified by Clarke, most studies have been of the structural feature to structural feature and site to site kind. Only a few have considered the portable artefact to artefact, the artefact to structural feature dimension, or the artefact to the site distribution combination. Unfortunately, Clarke's (1977:9) concept of the resource space and its relationship to artefacts, structural features, sites, and to other resource space has been little if at all developed.

Finally, diachronic relationships and changes in settlement pattern over time are as yet not well established. Most that tackle this aspect of analysis do so for the late prehistoric to early historic period, as in Samoa. Few do so for the much earlier fully prehistoric levels. That is because, except in New Zealand, settlement pattern information for the earlier sites is not yet available.

Thus I conclude that spatial studies in Oceanic prehistory are still the poor relation. The temporal dimension and assemblage dating remains a primary concern, into which much time, energy and resources go. Content, too, gets a great deal of consideration and much ingenuity is put into describing and interpreting the portable artefactual, structural and midden material that is recovered. However, when it comes to the spatial information in the data, there is a very long way to go before we are exploiting fully the information we already have or can hope to gather to the extent that this appears possible from the various examples reviewed here of work done in the Oceanic region in the 1970s. Hopefully, the symposium and the publication of some of its papers will further serve to stimulate such efforts.

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