Picturing Pacific Prehistory
The rock-art of Vanuatu in a western Pacific context

Volume I
Text

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Rock-art and history in the western Pacific: a review

For many authors rock art seems to be a fascinating but enigmatic part of the landscape, to be noted but never understood. Specht 1979: 58

1.1 Rock-art: the invisible component of Pacific archaeology

In a recent book advertised as a synthesis of ‘the grand sweep of history in the Pacific Islands’, and written by one of the most influential of Pacific archaeologists, the rock-art of the Pacific Islands is barely acknowledged (Kirch 2000). Indeed, the relative absence of any attempt to integrate the region’s rock-art into historical reconstructions is remarkable. The study described in this thesis emerged in response to the lack of coverage of rock-art in general archaeological texts on the Pacific (e.g. Kirch 1997; Spriggs 1997; Bellwood 1997).

The challenge, as I see it, is to develop a model for western Pacific rock-art which might contribute to archaeological reconstructions of regional prehistory, which have been dominated by analyses of more conventional materials, such as ceramics and stone tools.

There have been several attempts to document aspects of the region’s rock-art, but these studies have tended to be restricted in their geographical focus and thus in their ability to enhance our understanding of Pacific prehistory. This can be attributed largely to the fact that Pacific rock-art studies remain in a ‘data procurement and reporting’ stage. Inter-regional collaboration is in its infancy, with most researchers adopting rock-art recording methodologies appropriate to their own area of study. Examples of these local studies include Röder’s (1956, 1959) analysis of the rock-art of the MacCluer Gulf, Roe’s (1992a) study of the rock-art of Guadalcanal (Solomon Islands), Spriggs and Mumford’s (1992) overview of sites in Southern Vanuatu, Frimigacci and Monnin’s (1980) inventory of rock-art motifs for New Caledonia, Lee’s (1992) analysis of the rock-art of Easter Island, Millerstrom’s (1990) Masters research on the rock-art of the Marquesas, Lee and Stasack’s (1999) recent synthesis of the rock-art of Hawai‘i, and Trotter and McCulloch’s (1971) summary of the rock-art of New Zealand.

There has been only a handful of attempts to understand how the rock-art of each of these regions articulates with one another. Comparative analyses of western Pacific rock-art which have aimed to relate findings to broader reconstructions of Pacific prehistory have been undertaken by Hugo (1974), Specht (1979), Rosenfeld (1988) and Ballard (1992a). The task for each of these researchers, however, was invariably inhibited by a lack of
comprehensively recorded and inter-regionally comparable data. As a result, none of the rock-art models constructed by these authors derives from a systematic comparison of regional motifs. David Hugo (1974) embarked on a brief motif analysis but employed a relatively limited data set to do so. The two most comprehensive studies of western Pacific rock-art, by Specht (1979) and by Ballard (1992a), relied almost exclusively on the analysis of non-motif data. Attention was paid by these authors to the relative distributions of rock-art techniques, colouring agents, and the locational contexts in which rock-art sites were found to be situated.

1.2 The AES and the APT

One of the most significant outcomes of these previous comparative studies was a widespread assertion that the rock-art of the western Pacific is divisible into two broadly defined styles or traditions of painting and engraving (Specht 1979, Rosenfeld 1988, Ballard 1992a). It is the distinction between the techniques of painting and engraving that provide the point of departure for this thesis.

For the purposes of this thesis I define style as a ‘manner of doing’ (Sackett 1977: 370; see also Hodder 1990; Chippindale and Taçon 1998b). My understanding of style is that it is not just applicable to the graphic object (e.g. motifs), but to all behaviour integral to the rock-art production process. For instance, throughout the western Pacific rock-artists had a propensity to paint pictures high up on rock-surfaces. While the act of rendering pictures inaccessible in this way may have performed a certain function (deliberately rendering rock-art beyond reach), such an act also constitutes a particular ‘manner of doing’ something, or style.

Elaborating on passing observations made by previous authors (e.g. Egloff 1970, Hugo 1974), Jim Specht (1979) postulated the existence of a widespread engraving style in the western Pacific. This style was said to be defined by sites portraying examples of a particular set of curvilinear motifs, found on boulders and open rock faces, and located either within or adjacent to water sources. It was also said to correspond with the distribution of current Austronesian-speaking language areas.

Ballard (1992a), on the other hand, identified a repeated set of features found at numerous sites across the western Pacific which he defined as an ‘Austronesian painting tradition’ [my emphasis]. Ballard used the term ‘tradition’ as an analytical tool to generate a chronology

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1 While not denying the merits of Hugo’s study, his motif analysis was based on a total of only 77 different motifs. The present study employs over 600 different motifs.
for a widespread rock-art style that corresponded with the distribution of current Austronesian-speaking areas. Based on visual correlation observed between motifs associated with rock-painting assemblages and other material items (e.g. pottery, metal objects), he argued that the Austronesian painting tradition emerged around 2000 BP, after the initial incursion of Austronesian speakers into the western Pacific region.

Here I define a ‘tradition’ as an analytical unit which links together similar attributes (including style attributes) in time and space. This notion of a ‘tradition’ is an analytical fiction because it abstracts archaeologically observable attributes from original contexts of production which would have involved other media and functional attributes that are lost to us now. An archaeological tradition thus does not equate to an ethnographic tradition where these other attributes can be observed and understood as part of a coherent living tradition.

With these definitions understood, we can begin to examine the spatial, temporal and, where possible, cultural relationships between the ‘Austronesian engraving style’ (AES) and the ‘Austronesian painting tradition’ (APT). Three questions now need to be asked:

1. Are the AES and APT appropriate analytical units, or do they require redefinition?

2. Are all of those sites which have been identified as belonging to the AES part of a spatially and culturally related tradition, and can any sub-styles within the AES be observed?

3. Is the APT constituted by a single style, or is it represented by a number of spatially and temporally discrete sub-styles?

1.2.1 The role of Vanuatu

The conceptualisation by Specht and Ballard of the AES and APT has opened the door for a novel exploration of social and cultural dynamics in the western Pacific. However, curbing any form of comprehensive investigation of the relationship between these two analytical entities is a persistent lack of spatially and temporally coherent data throughout the region. One way in which this problem might be overcome is through an in-depth study of the rock-art of a single region where elements of the APT and AES appear to be present. Vanuatu was considered ideal for this purpose.
One of the most important features shared by the APT and AES is that their distribution has been independently linked to Austronesian-speaking areas. Vanuatu – a region likely to have been first visited and settled by Austronesian-speakers and one where both engraved and painted sites were already known to exist – thus presented an optimal region for exploring the spatial and temporal relationship between the AES and APT. The methodological program which has been developed in order to investigate the relationship between the rock-art of Vanuatu and the western Pacific is explored in further detail below.

1.3 The archaeology of rock-art: what does it have to offer in the Pacific?

Some sense of the scope of future rock-art studies in the Pacific can be gauged from a brief consideration of several developments in global rock-art research. Since the 1960s rock-art studies have increasingly moved away from basic analyses of formal variability towards an assessment of the role of rock-art within specific social contexts. This has come about through comprehensive analyses of the ways in which rock-art articulates both synchronically and diachronically with other forms of archaeological and ethnographic evidence (examples from Australia include McDonald 1994; David and Chant 1995).

In much of Europe, where studies of Palaeolithic rock-art have not been able to draw upon direct ethnographic analogy, researchers have adopted and developed the structuralist approaches of Lévi-Strauss in an attempt to uncover meaning from the distribution of rock-art within sites (e.g. Leroi-Gourhan, 1965, 1982). Such approaches have been challenged, however, for their common assumption that ‘behind exotic images lay familiar mental oppositions such as male:female or culture:nature.’ (Layton 2000: 48). The structuralists considered that culture could be divided up into ‘familiar categories’, and that it was ‘transparent and unchanging’ (Layton 2000: 48). In Southern Africa, where direct historical analogies have been drawn from ethnography and ethnohistory, rock-art has been largely understood in terms of shamanism and trance experiences (Lewis-Williams 1981). This approach is still widely in favour, and has been adopted for the interpretation of rock-art in many parts of the world (see various papers in Chippindale and Taçon 1998a). Another important area of focus is the view that the stylistic component of rock-art conveys social information; a notion spearheaded by Martin Wobst’s (1977) theory of ‘information exchange’. The basic tenet of Wobst’s argument is that patterning in rock-art assemblages is indicative of social proximity and relative degrees of social connectedness. In a succinct statement of this position, Smith (1992: 34) notes that,
Proponents of the information exchange theory suggest that relative stylistic homogeneity indicates the functioning of open social networks in areas of low population density or resource scarcity, or both. The converse of this is that stylistic heterogeneity is more likely to be found in rich environments where people are principally concerned with maintaining primary rights to resources in their own territory ... Groups of people in such regions therefore choose to emphasise differences between themselves and their neighbours and stylistic heterogeneity functions to define and reinforce those differences.

The principal value of information exchange approaches which specify the communicative role of rock-art is that human actors are seen as active in the production of meaning through rock-art, and style is seen as active in social process (Conkey and Hastorf 1990). From this perspective, style is imbued with power, having the ability to guide behaviour and evoke responses and change.

More recent conceptions of style are critical of the way in which ‘social actors’ are distinguished from the ‘material world’, such that stylised objects are conceived of as ‘out there’ (Boast 1997; David and Wilson 1999). Such criticism draws heavily upon phenomenological approaches which treat landscapes (such as rock-art settings) as meaningful, socially constructed places involving bodily and cognitive experience (e.g. Relph 1985; Rodman 1992; J. Thomas 1993). This landscape approach to rock-art as a means of interpreting past human behaviour has emerged recently as one of the more popular perspectives.

Only a handful of projects in the Pacific, specifically in Polynesia, have adopted some of these theoretical approaches in attempts to situate rock-art within a social realm (e.g. Lee 1992; Millerstrom 1997, Lee and Stasack 1999, Lee 2002). It is anticipated that future studies in the Pacific will not only examine the role of rock-art within changing social contexts, but will also entail detailed comparisons of motifs and structural elements of art across a suite of different media, such as tattooing and barkcloth, within which the region’s rock-art increasingly appears to be embedded (Wilson 1998).

As noted at the beginning of this chapter, Pacific rock-art studies are rarely situated within archaeological frameworks of interpretation. I suggest that this is primarily due to the fact that Pacific prehistory is strongly driven by the ‘mega-questions’ of the region (Bellwood 1998: 966) which are associated with colonisation processes and the reconstruction of social change at a broad inter-regional scale. In order for rock-art to be incorporated into broader reconstructions of the past, particularly in the western Pacific where there has been
comparatively little research, a basic comparative framework for rock-art is required. In this respect it is worth recalling a recent statement by Spriggs (2001a: 246), who observes that,

Chronology-building, while unfashionable at present, is absolutely basic to theory building in Pacific archaeology. We will never get to the 'why' questions or even the more-than-basic 'what' questions unless we resolve a whole series of chronological issues of timing and duration of archaeological phenomena in the region.

The study of western Pacific rock-art is at present devoid not only of a chronological foundation, but also of a rigorous spatial framework. In order for Pacific prehistorians to appreciate the potential of western Pacific rock-art as a field of study which can actively contribute to our knowledge of the past, a fundamental understanding of the space-time relationships between rock-art sites is required. This thesis represents a first step in this direction, with the ultimate aim being to develop a preliminary model of rock-art transformation for the western Pacific region.

1.4 Thesis methodology: choosing between informed and formal methods

Chris Chippindale and Paul Taçon (1998b: 6) suggest that rock-art studies tend to invoke two basic analytical methods: the 'informed' and the 'formal'. By 'informed' methods these authors refer to,

those that depend on some source of insight passed on directly or indirectly from those who made or used the rock-art – through ethnography, through ethnohistory, through the historical record, or through modern understanding known with good cause to perpetuate ancient knowledge; then, one can hope to explore the pictures from the inside, as it were.

For several reasons, the use of informed methods is inappropriate for the current study. Informed methods of rock-art analysis are useful if one is interested in exploring the social framework in which rock-art was produced. In most parts of the Pacific, however, ethnographic insights into rock-art production and iconography are rare. Moreover, in the context of the present study, which seeks to explore rock-art variation on a much larger regional scale, such insights are basically redundant. For this reason I have elected to use formal methods of rock-art analysis. Formal methods are described by Chippindale and Taçon (1998b: 7) as,

those that depend on no inside knowledge, but which work when one comes to the stuff 'cold', as a prehistorian does.
In this sense it is the pictures themselves, and their relationship to each other and their surroundings, which are the subject of study.

1.4.1 A formal approach to studying meaningful versus coincidental similarity

Based on our current knowledge about the distribution of rock-art in the western Pacific, a formal study of the similarities and differences within the body of the region’s rock-art should be expected to result in the identification of two major groups; one defined by paintings and the other by engravings. But how can we be certain that the similarities identified are meaningful? In this thesis three related steps are considered critical in enabling this distinction to be made:

1. **Recognising the degree of schematisation and the cross-cultural occurrence of motifs.**
   According to John Clegg (1995: 81), what makes a schematic picture unrecognisable to cultural outsiders is the addition of 'diagnostic bits of information'. Clegg (1995: 81) uses the example of a political cartoon as an example of how this process of cultural modification of a universal schema takes place. Caricatures of Australian politicians involve ‘...[t]he grafting of exaggerated diagnostic features onto a neutral base.’ (Clegg 1995: 81-82). Throughout this thesis I differentiate between motifs which are described as ‘standardized schemas’ (which are recognised cross-culturally and are therefore less informative about cultural relations), and ‘diagnostic schemas’, which are graphic attributes generally confined to the study region and therefore more likely to be culturally specific.

2. **Calculating the degree of motif replication in a given region.**
   Even if a motif can be described as a ‘standardized schema’ it is still important to determine how often this motif is replicated in any given region. If, for instance, a generic or standardized depiction of a face (comprising, for example, a circle for the face, two circles for the eyes, and an upwardly arched line for the mouth) is the predominant motif at several geographically proximate sites, then some form of shared cultural process is most likely responsible for the similarities observed. Replication, however, is not simply about counting pictures. Significance is also defined in this thesis in terms of the number and quality of coincident similarities and differences between a range of other factors associated with rock-art production. Ballard (1992a), for instance, found a repeated association between a particular body of painted rock-art, found almost exclusively in Austronesian language areas, on cliff faces by the sea, and in inaccessible locations.

3. **Calculating the presence and absence of rock-art features.**
   As well as calculating the number of times particular combinations of features (e.g. motifs) are replicated, it is also
necessary to examine their distribution across space. The absence of a motif within a particular region can be equally as significant as its presence.

Interpretative preference is thus accorded to the inter-site presence of culturally diagnostic traits with high frequencies. The aim is to identify combinations of traits, bounded in time and space, for which cultural explanations may be invoked. Because the significance of rock-art similarities is measured on the basis of the number of times particular combinations of attributes are found together, a methodology for simultaneously analysing multiple traits is required. Particular statistical methods have been selected for this purpose.

1.4.2 The use of statistics in comparing rock-art

Engaging in a regional study of rock-art of the magnitude attempted in this thesis inevitably requires a methodology which will facilitate the comparison and quantification of exceptionally large data-sets. The type of data generated for this study consists of matrices of sites (rows) characterised by a large number of motifs (columns). One useful and proven method for searching for patterns among rock-art data defined by large numbers of variables of this kind is multivariate statistics (Hyder 1991; Magne and Klassen 1991; Taçon, Wilson and Chippindale 1996; Wilson 1998). By employing a range of ordination methods (correspondence analysis, principal components analysis, and multidimensional scaling), and comparing the results obtained from these different methods, the degree of overall similarity between rock-art sites throughout the western Pacific can be defined. The results are displayed as graphical summaries, in which each site is represented by a point in two-dimensional space. Sites which are similar plot more closely together, while dissimilar sites plot further apart. The distance on a graph between two sites is taken as a measure of cultural and historical relatedness, bearing in mind variation which may have been caused by factors such as the medium used and the skill of the artist.

1.4.3 Phenetic similarities

One type of similarity relation used by numerical taxonomists (Sokal and Sneath 1963) to describe correlations between living creatures is phenetics, which is defined by the overall similarity among specimens to be classified (Figure 1.1). Since no strategy is known for weighting rock-art attributes according to their evolutionary importance, similarity is initially defined in this thesis by the phenetic relations between many correlating motifs, without differential weighting of certain motifs over others.

In order to develop a model of rock-art transformation for the western Pacific we need some means of differentiating between traits which have been transmitted from a common origin
(e.g. homologous motifs) and those which are the product of diffusion or borrowing. However, given the common lack of an adequate chronological framework within which to situate rock-art evidence, this is not a straightforward task. It is therefore necessary to defer to a range of circumstantial evidence, models for which have already been proposed by other authors.

Pacific colonisation is usually thought to have occurred in a broadly west to east direction, offering a basic spatial and temporal framework within which to examine similarities and differences between archaeological and other historical data (e.g. Kirch and Green 1987). If phenetic relationships between motifs demonstrate a clinal pattern on multivariate graphs that corresponds with this basic framework, it is likely that such a result reflects distance from a common ancestral origin. This interpretation would appear even more probable if an entire suite of motifs and other rock-art traits was transmitted from one region to the next, with the degree of difference between a site and a source region corresponding to the geographic distance between them. Such a schematic model for tracking the distribution of art motifs across the Pacific and attributing them to historical continuity from common ancestral populations has previously been employed by Mead (1971), Green (1979), and Wilson (1994; 1998).

In addition to this general model of colonisation, Kirch (1997: 130) has proposed a more specific means of distinguishing between motif repertoires which emerge as a result of 'ancestral connections'. Kirch argues that for Lapita dentate-stamped ceramics to have been transmitted from one region to the next through processes of borrowing or diffusion, evidence of individual Lapita design elements being 'recombined in new patterns or structural codes' should be detectable. Instead, however, Kirch (1997: 130) suggests that,

the entire complex design system (including the core set of design elements, common motifs, and process rules) is replicated from site to site. Such structural consistency can only reflect a shared, ancestral tradition [my emphasis].

Other examples of rock-art which has been thought to reflect processes of colonisation derive from Australian evidence. Wobst's (1977) model of information exchange (described above) has been used as a means of distinguishing between an early body of 'homogeneous' engraved rock-art (often referred to as 'Panaramitee'), and several later, stylistically heterogeneous, bodies of painted rock-art (Smith 1992). The early and homogeneous engraved rock-art is thought to reflect efficient colonisers with a 'high dispersal ability, high rates of reproduction and low levels of territoriality' (Wilson 1975; cited in Smith 1992: 34).
One explanation for the production of stylistically indistinguishable rock-art across a broad region is the benefit which results from maintaining widespread social cohesion. A similar argument has been applied to the Lapita context where the widespread reproduction of a set of Lapita designs is conceptualised as a symbolic 'lifeline' between colonising communities (Green and Kirch 1997).

If there is no evidence of a clinal pattern in the rock-art of the Pacific which is indicative of a process of colonisation from shared ancestry, then other explanations for the similarities and differences between rock-art must be sought. Homogeneous rock-art patterns may also suggest processes of interaction and communication involving the borrowing and diffusion of motifs. Without a chronology for rock-art, however, directions of influence are difficult to detect. Problems also arise in circumstances in which the motif correlations observed on multivariate graphs are the result of both colonisation and processes of inter-archipelagic contact, as the latter (interaction) would probably obscure evidence of clinal variation caused by transmission as a result of colonisation. This methodological issue pertaining to the use of multivariate statistics is discussed as it becomes relevant throughout this thesis.

1.5 The sample area

The primary unit of analysis used in this thesis is the ‘site’. Sites are compared at two main geographic scales, the western Pacific and Vanuatu:

1. Western Pacific: By definition, this region extends from East Timor in the west, to Tonga and Samoa in the east. However, due to the time constraints imposed on this study, formal comparisons are made only within and between rock-art sites from eastern mainland PNG (including Central Province, Milne Bay Province and Morobe Province), Island Melanesia, and Fiji-Western Polynesia. Island Melanesia is defined here as inclusive of the Bismarck Archipelago, the Solomon Islands, Vanuatu, and New Caledonia. Fiji-Western Polynesia consists of the islands of Fiji, Tonga and Samoa.

2. Vanuatu: statistical analyses involving both frequency counts and multivariate methods are used to compare rock-art sites within Vanuatu, and between Vanuatu and the area delineated in (1) (Chapters 6-9).

1.6 Definition of terms

1.6.1 Rock-art

For the purposes of this thesis, Chippindale and Taçon’s (1998b: 6) unconventional hyphenation of the term ‘rock-art’ is adopted, as opposed to the conventional ‘rock art’. In
accord with these authors I believe that ‘art’, as defined and understood by recent western societies, is ‘not suited to those many societies where the crafty making of images and pictures was a business centrally integrated with other concerns’ (ibid).

My definition of a rock-art site is derived from Flood (1997: 357), who includes ‘...non-utilitarian intentional [marks] or pictures painted, drawn, stencilled, imprinted or carved on a rock surface...’. Rock surfaces include non-portable canvases such as boulders, shelters, caves and other naturally occurring outcrops. Omitted from this definition are mobiliary and statuary artefacts, such as portable stone carvings or painted stones. In addition, due to time constraints imposed on this thesis, the vast majority of carved monoliths are neither described nor statistically analysed. However, the Boianai and Wedau stones in the d’Entrecasteaux Islands (Williams 1931; Egloff 1979) and the carved heads on Unea in West New Britain (Reibe 1967) have been deliberately included to enable some level of comparison to be made between conventional rock-art sites and carved stone monoliths.

1.6.2 Rock-art techniques: painting and engraving

In this thesis, the term ‘painting’ is taken to include pictures which have been applied with both ‘wet’ and ‘dry’ pigments. It is conventional in rock-art research to differentiate between these two types of application: wet pigment rock-art is usually ‘painted’, and dry pigment is usually ‘drawn’ (Flood 1997: 352, 356). Much painted rock-art in the western Pacific, however, is located on hydrologically active limestone surfaces, often making it difficult to assess whether a liquid binding agent was used. I have therefore adopted the term ‘painted rock-art’ to refer to rock-pictures which have been produced using either wet or dry pigment.

The term ‘engraving’ is used to define a picture resulting from a process of stone extraction. There are various technologies associated with engraving production, such as pounding, abrading, pecking and incising. The individual technical classes associated with painting (e.g. stenciling) and engraving (e.g. abrasion) are defined later in this thesis as they become relevant to the study.

1.6.3 Picture and motif

My definition of a ‘picture’ corresponds with Clegg’s (1978:42; cited in Flood 1997: 355) definition of a ‘mark’ which, adopting his terminology, I take as ‘any drawing, painting,

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²Here I distinguish between naturally occurring boulders and stones which have been moved or modified as a result of human agency.
engraving or other modification of nature which is probably a human artefact.' Throughout this thesis the 'picture' is the primary graphic unit employed.

In defining a 'motif' I follow Flood (1997: 355), who describes it as 'a repeated form or recurrent type or class of [figure]'. Thus, for example, a site may consist of two pictures (both circles with central crosses), but only one motif (a circle with a central cross). A picture cannot contain more than one motif.

1.7 Research process

Prior to this thesis, growing numbers of major rock-art sites in Vanuatu were gradually becoming known through fieldwork conducted by the Vanuatu Cultural Centre’s site survey program (VCHSS) and by Matthew Spriggs from the Australian National University. Already familiar with much of the literature on the rock-art of the Pacific (Wilson 1994; 1998), I identified Vanuatu as an ideal location in which to directly test many of the existing models defining the rock-art of the western Pacific (see 1.3 above). A moratorium imposed on researchers working in Vanuatu was lifted in 1994, after which the Australian National University-Vanuatu National Museum archaeological project commenced. As part of this project, and for the purposes of this dissertation, I undertook two major field seasons in Vanuatu in 1996 and 1997, targeting areas where rock-art was already known to exist. Working in collaboration with Vanuatu Cultural Centre (VCC) fieldworkers Jeffrey Uli Boe, Jimmyson Sanhambath, Douglas Meto, Jerry Taki, and Sophie Nempan Sei, I surveyed and recorded rock-art sites on the islands of Maewo, Malakula, Lelepa and Erromango.

The analytical component of this thesis was conducted in two parts: the first involving a broad scale comparison of rock-art across the western Pacific (excluding Vanuatu), and the second a more detailed local-scale comparison of the rock-art of Vanuatu. The differences in the level of detail associated with each analysis are largely a reflection of data availability. Collation of data for rock-art sites in the western Pacific proved to be an inordinately difficult task due to a dearth of published (or even unpublished) illustrations, and the fact that relevant data were often stored only in personal field diaries and slide collections, rendering them difficult to access. Added to this was the problem raised above of the lack of comparability between individual site records which had been produced largely without the possibility of inter-regional analysis in mind.

Conversely, the system of site recording I employed in Vanuatu was specifically designed to permit inter-regional comparisons. As a consequence, the level of recording detail for the Vanuatu sites now exceeds that available for most other sites in the western Pacific. For
Vanuatu I have recorded both qualitative and quantitative data; that is, both the type and incidence of motif and non-motif variables at a site. Together, these data provide a reliable means of determining degrees of inter-site correlation. For example, two sites may contain paintings of circles and crosses. At one site, however, the ratio of circles to crosses may be 10:1, while at the other it may be 1:10. Alone, the qualitative data indicates a 100% correlation between the two sites (they both contain exactly the same types of motifs), while the quantitative result indicates only a 10% correlation. This example demonstrates that interpretations derived from both quantitative and qualitative data differ significantly from those derived from just one of these approaches alone.

One of the major methodological problems confronting this study was that the data available at a western Pacific scale are insufficiently detailed to provide quantitative information (e.g. the number of times a particular motif is found at a site). I therefore decided to conduct three separate analyses: one comparing western Pacific sites (excluding Vanuatu) using qualitative data only; another comparing sites within Vanuatu using both qualitative and quantitative data, and a third comparing western Pacific sites to sites within Vanuatu using qualitative data only. The following discussion situates these analytical processes within the overall framework of the current study.

1.8 Thesis outline

This thesis consists of two volumes. Volume One comprises a total of nine chapters (the contents of which are outlined below), and Volume Two includes most of the accompanying figures, as well as chapter appendices and several subsidiary publications. Volume One is presented in four parts, of which this introduction is the first.

Part two of this thesis is focused on the broader relations between rock-art sites in the western Pacific. Before embarking on the statistical analyses of these sites, an overview of the history of archaeological research in the western Pacific is presented in Chapter 2. Contemporary theoretical issues and debates are reviewed, and a range of methodologies for using rock-art to contribute to the resolution of these debates are outlined. In Chapter 3 the existing regional models pertaining to western Pacific rock-art are surveyed, and the current state of rock-art research in the region is summarised. This is followed by detailed descriptions of the rock-art found in each Pacific region, the objective being to provide a regional context for situating the results of the statistical analyses presented in Chapter 4. In Chapter 4 several statistical methods are employed to compare the non-motif and motif data which characterise western Pacific rock-art sites (excluding Vanuatu). The results are
assessed in light of the notion that there are two distinct groups of rock-art in the western Pacific: one defined by engravings and the other by paintings.

In Part three of the thesis the aim is to develop a detailed spatio-temporal model for the rock-art of Vanuatu. In Chapter 5, an overview of the archaeology of Vanuatu is provided, the aim being to provide an historical context for analysing and interpreting the rock-art of this archipelago in later chapters. Chapter 6 provides a brief history of rock-art research in Vanuatu followed by a series of quantitative and qualitative analyses which are performed on non-motif and motif variables. Emphasis is placed on the distribution of these variables through space. In Chapter 7, transformations in the rock-art of Vanuatu through time are considered using both chronometric and relative methods of dating. In Chapter 8 the results of the previous three chapters are assessed together, and a model of rock-art transformation for Vanuatu is proposed.

The thesis is concluded in Chapter 9 (Part 4) with a final comparison between the rock-art of Vanuatu and other western Pacific sites. A preliminary model for the genesis and transformation of various ‘traditions’ of rock-art in the western Pacific is presented. In returning to the questions posed in Part two, the thesis closes with reference to the ways in which future rock-art studies might come to take a more central role as one amongst many lines of evidence in the archaeological reconstruction of Pacific prehistory.

1.9 Working with the Vanuatu Cultural Centre

Since 1998 I have been engaged in two further projects in Vanuatu, both of which bear significantly on the issues raised in this thesis. The first is an ongoing collaboration with Vanuatu Cultural Centre (VCC) staff and local community members to conserve and manage Yalo cave, an important kastom site in Northwest Malakula. Part of this project has involved compiling a detailed record of this site, currently the largest and richest rock-art site in Vanuatu. The project is being conducted under the auspices of the VCC, which has a policy that ‘[a]ll research projects … include a cultural product of immediate benefit and use to the local community’ (Vanuatu Cultural Centre 2001).

The second project is a study funded by the Australian Research Council (ARC) led by Dr. Bruno David (Department of Geography and Environmental Science, Monash University), which involves dating the rock-art of Vanuatu using chronometric methods. Two field seasons have been conducted for this project so far and some of the results, which have been

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3In 1998 and 1999 this project was funded by the East-West Centre (Honolulu, Hawai‘i). The 2001 season was funded by Asia-Pacific Focal Point, administered through Environment Australia.
processed by the Australian National Science and Technology Organisation's (ANSTO) AMS dating facility, are reported in this thesis.

One of the most rewarding aspects of each of these projects (including the thesis fieldwork) has been the opportunity to work in close collaboration with Vanuatu Cultural Centre fieldworkers, staff and members of local communities. As a result of this experience, greater account has been taken of ni-Vanuatu methods of controlling information collected for doctoral and other research. This thesis includes visual material which is strongly protected by traditional copyright. With the aim of upholding the customary rights of the owners of traditional forms, approval to present the material recorded from Vanuatu has been granted by the Vanuatu Cultural Centre.
2
Pacific contexts: colonisation and change in the islands

2.1 Introduction

This chapter sets Vanuatu prehistory in a broader regional context by reviewing the existing literature on colonisation and cultural change in Pacific island societies. Of necessity, the debates presented are selective. Rather than offering an exhaustive review of the extensive literature on Pacific prehistory, I have elected to discuss only the most recent theories that have major implications for my own research into rock-art. Themes explored in this chapter include colonisation and settlement, economy, exchange systems, environmental impacts, the 'Lapita phenomenon' and post-Lapita developments. Emphasis is placed in particular on the 'indigenist versus intrusionist' debate which concerns the putative origins of Lapita, with a view to contributing to its resolution through the analysis of rock-art.

The Pacific Ocean constitutes nearly one third of the surface of the earth (Fig. 2.1). Since European contact, the islands of the Pacific have been divided into three broad geographical zones – Polynesia in the east, Melanesia in the west and Micronesia in the north. Surrounding this oceanic expanse are Australia to the south, Indonesia and Southeast Asia to the west, and the Americas to the east. However, the appropriateness of this tripartite division has not withstood the test of time, having been recently deconstructed by both N. Thomas (1987) and Green (1991a). Green (1991a), who questioned these geographical divisions primarily on the basis of biogeographical differences, draws a useful alternative distinction between Near and Remote Oceania. Near Oceania includes all inter-visible islands extending from the Huxley-Wallace Line (which separates Asian from Australasian faunas) to the eastern end of the Solomon Islands, while Remote Oceania comprises all island groups separated from Near Oceania by ocean gaps exceeding 350km, including the whole 'Micronesian' region (Green 1991a: 495). On the basis of this redefinition of the Pacific, 'Melanesia' – the principal geographical area considered in this study – is not a unified concept.

The initial colonisation of the various islands dotting this expansive seascape is now almost unanimously considered to have occurred in an easterly direction. The vast waters of the Pacific, particularly across its eastern stretch, were evidently a barrier to human occupation until the last 3500 years, making it one of the last corners of the world to have been settled by humans. Coinciding with or following just after the initial colonisation of Sahul
(including Australia) during the late Pleistocene, people moved into the western Melanesian islands of the Bismarck Archipelago and the Solomons. But it was not until the late Holocene that the major sea-crossing from Makira (at the end of the Solomon Island chain) into Remote Oceania took place with the settlement of the eastern outer islands of the Solomons, Vanuatu and New Caledonia. On Eastern Polynesia’s doorstep, colonisation may have faltered for up to c. 1500 years in Fiji, Tonga and Samoa, a region long seen as an island-hopping bottleneck in the eastward expansion of Pacific colonisation. This threshold was finally breached, culminating in eventual landings on Easter Island in the east and Hawai’i in the north in about the 9th century AD, and in New Zealand in the south in the 13th century AD (Spriggs and Anderson 1993).

Over time, ‘Island Melanesia’ (defined in Chapter 1) is thought to have experienced a series of major linguistic events (Spriggs 1997: 9). The first occurred perhaps 40,000 years ago or earlier with the arrival of people in Near Oceania (communities whose descendents now speak a wide variety of languages commonly grouped together as ‘non-Austronesian’); the second is generally attributed to an influx of Austronesian speakers, possibly around 3500-3300 BP; and the third is associated with a backwash of Polynesians into Island Melanesia, most likely within the last 1000 years. Many finer-grained linguistic changes resulting from migrations and extinctions certainly occurred but these are not so easily detected. These three major linguistic events have been linked to correspondingly significant archaeological changes thought to have a similar chronological order.

Historically, Island Melanesia was the locus of a cultural phenomenon commonly referred to as ‘Lapita’ (see below). The ‘Lapita Peoples’, as described by Kirch (1997), are generally thought to have engineered the first crossing of the biogeographic boundary that separates the main Solomon Islands from Vanuatu, thereafter continuing to expand into Polynesia. The means by which voyagers achieved these sea crossings is unknown but various models examining the possibilities of landfall using particular voyaging strategies have been proposed. One such example is Irwin’s (1989, 1992, 1993) coloniser model, based on upwind searches for new islands and downwind returns.

The archaeology of the Lapita period forms an important focus of this chapter because its emergence coincides with the colonisation and settlement of Vanuatu. The considerable movement of people and things through Island Melanesia at this time would have impacted on all aspects of island social practices, including art. It was at this time that decorated pottery first appeared, providing an archaeologically datable material with which rock-art can be formally compared.
2.2 The Pleistocene

Prior to the research of the Lapita Homeland Project which commenced in 1985 (Gosden and Allen 1984; Allen and Gosden 1991), the only Pleistocene site known in Island Melanesia was Misisil Cave, New Britain (Specht et al., 1981). Since then, several sites dated at between 40,000 and 20,000 BP have been discovered, including Yombon (New Britain), Matenkupkum (New Ireland), Buang Merabak (New Ireland), Kilu (Buka) (Allen et al. 1989; Pavlides and Gosden 1994; Rosenfeld 1997; Wickler and Spriggs 1988) and Pamwak (Manus) (Spriggs 2001, pers. comm.) (Figure 2.2). By 20,000 BP, Yombon, Matenkupkum and Kilu all appear to have been abandoned.

Is there a Pleistocene rock-art in the Pacific and, if so, can it be distinguished from later rock-art styles? Spriggs (1997: 66) believes that any rock-art which may have been produced prior to around 3500-3300 BP would have long since disappeared:

That the early Island Melanesians had an aesthetic sense is obvious. They were after all modern humans like us. If they painted on cave walls the tropical climate would long ago have removed all traces. Other canvases for their art were likely to have been even more ephemeral. They had no fired clay pots to paint or incise. Their songs have gone.

As evidenced by the Australian evidence, however, Pleistocene cave art can survive under certain conditions, such as paintings and stencils in protected limestone caves, and engravings in both open and sheltered settings (Flood 1997; and various papers in Ward and Tuniz 2000). In those parts of Island Melanesia where human occupation can demonstrably be shown to span many thousands of years, we should not discount the possibility of a long artistic record. Few of the possible contexts for Pleistocene rock-art have been explored, although subterranean cave sites have been discovered in the southern Highlands of New Guinea containing engravings which resemble Pleistocene rock-art in southern Australia (Ballard 1992b). In Island Melanesia, three sites with Pleistocene occupation contain rock-art: Panakiwuk, Balof 2 and Buang Merabak (New Ireland). While no attempts have yet been made to directly date the paintings at these sites, the motifs and their contexts are examined in Chapter 4 for clues as to their possible age.

2.3 The Southeast Asian 'Neolithic'

After about 6000 BP, when sea levels were approaching their current position, cultural changes associated with what Spriggs (1989, 2000) has described as the spread of the ‘Island Southeast Asian Neolithic’ began to take place. Spriggs (1989) has reviewed the radiocarbon determinations from the region, concluding that a series of new traits first emerged in the
north – perhaps in Taiwan – and subsequently spread southward. These included pottery production, polished stone and *Tridacna* shell adzes, agriculture, domesticated animals (pig, dog, chicken), and items such as stone ‘hoes’, clay spindle whorls, bark-cloth beaters, shell ornaments and fishhooks. Bellwood (1985; 1997) and Spriggs (1989) have both suggested that these cultural innovations occurred in tandem with the spread of Austronesian languages:

If a map of major AN sub-groups with an understanding of the sequence of language splits from Proto-Austronesian is put down over a map of the spread of the Neolithic in the region, it fits almost perfectly (Spriggs 1989: 608).

Further to the east, in the Near Oceanic regions beyond New Guinea, the picture around and immediately after 6000 BP is relatively blurred (Kirch 2000: 83). This is largely a result of the apparent lack of immediately pre-Lapita sites known in the region; a situation which will only be remedied by future research.

### 2.4 What is Lapita?

At approximately 3500-3300 BP (Kirch and Hunt 1988; Specht and Gosden 1997;), Island Melanesia witnessed a major cultural transformation with the ‘pencontemporaneous’ appearance of Lapita pottery and a range of associated artefacts and features (Kirch 2000: 91). The spread of this ‘cultural complex’ occurred over a period of about 500 to 750 years, and constitutes the first archaeological signature of colonisation in Remote Oceania. Many researchers attribute the emergence of the Lapita cultural complex and this new ability to voyage, visit and colonise islands beyond the then-settled Pacific to the same group of people – the Austronesians (Spriggs 1997; Bellwood 1997; Kirch 2000). Others tend to the view that Lapita is part of a local development within the Bismarck Archipelago which may have been inspired by contacts with communities to the west (Allen and White 1989; Ambrose 1997).

The dominance and focus on Lapita as a lens through which to view Pacific culture and people during this time beg the question: what is Lapita? While various authors have addressed this question (e.g. Green 1991b), Spriggs (1992: 221) narrows its definition to a set of five points which he believes covers the range of views in the literature:

1. an exchange network of goods produced by specialist centres (this would seem to be Terrell’s 1989 viewpoint);
2. affective links to a homeland, witnessed by the long-distance distribution of obsidian from the Bismarcks to areas such as Santa Cruz in the southeast Solomons, long after local sources of this and other items were available (Green 1987, [1994]);
3. a new economic system involving improved subsistence gardening, domesticated animals (pig, dog, chicken), fishing and shellfishing, hunting of previously unexploited faunal resources on pristine islands, and new cooking and food preparation technologies utilising pottery containers;

4. a shared religious ideology and social system, reflected in elaborate pottery decorations on ritual vessels, exchange valuables, ‘clan’ emblems and an assumed social hierarchy necessary to mount organized expeditions for colonization (Friedman 1981; Hayden 1983; and others);

5. language and ethnicity, shared by an initially endogamous, genetically distinct group intrusive into an already settled area and speaking an Austronesian language (Bellwood 1989; Shutler and Marek 1975; and others).

The appearance of Lapita is important for this thesis because it signals a period of major cultural change in the Island Melanesian region, when the colonisation of Vanuatu and other Remote Oceanic islands took place. Rock-art, if it was produced during this period, should reflect both the spatial and temporal extent of the Lapita ‘cultural network’, and the nature of interaction between participant islands. Some of the features of Lapita which might play a role in the analysis of rock-art are briefly detailed below.

2.4.1 The Lapita ceramic series

For a long time Lapita dentate-stamped ceramics have been classified into three groups: Far Western, Western and Eastern (Anson 1986) – each thought of as spatially and temporally discrete categories but with common design elements occurring between all three. Far Western Lapita is restricted to the Bismarck Archipelago (3500-3200 BP); Western is found in the Bismarcks, Solomons, Vanuatu and New Caledonia (from c. 3200 BP); and Eastern in Fiji-Western Polynesia (from c. 2900-2700 BP). The general trend is towards simplification of both decoration and vessel forms as one progresses eastwards. Anson’s general model has since been expanded by Kirch (1997: 71) who suggests that there is now sufficient evidence to propose the presence of four ‘provinces’ within Lapita, adding ‘Southern’ to the repertoire. The characteristics of the ‘Southern Lapita Province’, which is focused in New Caledonia, have since been explored and expanded upon by Sand (2000; 2001a).

In a major revision of these ‘regional’ models, however, Summerhayes (2000a) redefines Anson’s categories as temporal rather than spatial, i.e. Early, Middle and Late. Summerhayes (2000b) argues that movement (in the form of people and ideas, not pots) must have persisted across the entire Lapita cultural sphere in order for synchronous changes in Lapita pottery decoration to have occurred. On the basis of this temporal model, if rock-art was practised during the Lapita period and within the same cultural milieu which supported the production of Lapita pots, then we should be able to detect an homogeneous network of rock-art design within the spatio-temporal parameters of the Lapita complex.
2.4.2 Lapita exchange networks and Lapita as ‘trade ware’

Exchange networks associated with early Lapita movement appear to have been extensive and diverse, with settlements such as Talepakemalai on Eloaua accessing clay and obsidian sources from a relatively broad region. Subsequently, resource catchments, and hence interaction networks, appear to have become more constricted. For instance, while early Lapita levels at Talepakemalai were dominated by obsidian from both the Admiralty Islands and Talasea, later levels contained Admiralty obsidian only. In some areas, these economic contractions appear to occur with a concomitant decline in dentate-stamped pottery and an increase in other ceramic types (Kirch 1990). Such evidence of regionalisation has major implications for the anticipated spread of rock-art conventions during the Lapita period. The earlier and more expansive exchange networks should be reflected by broad scale homogeneity in the rock-art. However, we might expect later restricted networks to be expressed in terms of more regionalised rock-art.

On the subject of ‘exchange’ within the Lapita period, mention must be made of the nature of contact within the Lapita regional sphere. John Terrell (1989, 1999), a major protagonist in debates concerning Lapita, has suggested that orthodox ‘culture-history’ approaches in Pacific prehistory rely on ‘ethnicity’ as a means of organising the past. By pointing out that Lapita involves the trade of items such as obsidian beyond the spatial and temporal boundaries often used to enclose Lapita (Allen et al. 1989, Bellwood and Koon 1989), Terrell (1989: 625) argues that ‘we cannot seriously maintain that trade objects during the Lapita period only passed to and fro between Lapita kinsmen or that the exchange of goods in ancient Melanesia honoured the boundaries of an ethnically exclusive Lapita ‘colonizing exchange system’ (Allen and White 1989: 141; Green 1979).

Green and Kirch (1997: 20-21) offer a counter-argument to Terrell’s statements in relation to the colonisation of Remote Oceania, claiming that:

the historical origins of the Remote Oceanic exchange systems lay not with some already established networks pre-dating Lapita (as in the Bismarcks), but far to the west in the antecedent Far Western Lapita exchange system. Thus despite Terrell’s (1989: 625) claims to the contrary, it is possible to assert that trade objects during the initial phase of Lapita expansion into Remote Oceania did pass to and fro between Lapita kinsmen and communities of ‘ethnically-exclusive’ Lapita colonising and exchange networks, though this situation was not to persist indefinitely, especially in eastern island Melanesia (Green 1996).

In an attempt to dispel the view of Lapita as ‘nothing more’ than a trade ware, Green and Kirch (1997: 24) suggest that while trade in ceramics was certainly a post-Lapita event, it is
not a useful description for Lapita pottery, which is said to be locally produced in most cases (Summerhayes 2000b). Even at those locations where Lapita ceramics were imported, such as Mussau, the pottery was derived from many different sources of manufacture in a series of what the authors refer to as a ‘one-stop reciprocity exchange’.

My comparative analysis of western Pacific rock-art could provide some insight into this issue as rock-art, unlike pottery, is not a tradable item; fixity of location being one of its distinguishing features. If the initial phase of expansion out into Remote Oceania was engineered by genetically, linguistically and culturally related communities (‘Lapita kinsmen’), then rock-art practiced during this time should be extremely similar.

As a final point in relation to the issue of exchange, Green and Kirch (1997) note that networks in Remote Oceania did not really extend beyond individual archipelagos. This is explained as the result of a rapidly moving ‘colonisation front’ (Green and Kirch 1997: 30), which saw local exchange networks developing in these previously unoccupied regions. Rather than frequently participating in the larger (down the line) exchange network of their forebears, Remote Oceanic communities operated within more localised networks.

This proposition can also be tested against the evidence of rock-art. If similarities amongst rock-art assemblages in the western Pacific are based to some extent on inter-regional exchange, then the early rock-art of Vanuatu and other regions of Remote Oceania should fairly quickly evolve their own regional styles in keeping with more localised exchange networks.

2.4.3 Lapita through space

Lapita period settlement appears to have been associated with more intensive activity on the smaller, off-shore islands (at least in the Bismarcks) than during previous times (Gosden et al. 1989: 573), with subsistence during the Lapita period involving a combination of horticulture and marine exploitation. We might assume as a point of departure that if rock-art was practiced during the Lapita period and it has survived, then it could be detectable on these smaller islands.

Some parts of Island Melanesia do not appear to have been touched by the ‘Lapita Cultural Complex’. Archaeological and palynological evidence from Guadalcanal in the Solomons, for example, has revealed a cultural sequence persisting from about 6000 BP through to about 2300 BP, with no evidence of Lapita (Roe 1992b; 2000). Elements often associated with Lapita only start to appear after this time, evidenced by the arrival of the pig, shifts in
exchange networks, and major forest clearance. There is a large body of rock-art in Northwest Guadalcanal recorded by David Roe (1992a) which may reflect the apparent lack of Lapita evidence around 3000 BP (see Chapter 4).

2.4.4 Lapita through time

Much debate has centred on the speed at which colonisation by Lapita people took place. Some have argued for a very rapid dispersal of Lapita communities across the Pacific (Kirch and Hunt 1988), while others prefer a slower movement, as informed by the application of 'chronometric hygiene' to the existing archaeological data (Spriggs 1990a). There also appears to have been 'an acceleration in the eastward expansion of colonisation' coupled with a contraction of the duration of the Lapita cultural period in an easterly direction (Anderson 2001: 17-18).

The degree of similarity between rock-art associated with colonising movements across the Pacific may be instructive in this regard. A rapid colonisation front would presumably register in the rock-art record as an internally cohesive and homogeneous design system across the entire Lapita cultural sphere. A slower movement would allow for greater modification to this design system. Notably, however, without insight into the historical processes which impact on design systems and affect rates of design modification, there are limits to the effectiveness of this kind of test. An eastward acceleration of Lapita colonisation combined with a contraction of Lapita tenure should be represented by an easterly decrease in the volume of rock-art dating to the Lapita period.

2.5 Indigenous or intrusionist? The Lapita debate

Since the identification of Lapita as a community of culture by Golson in 1971, scholars have been divided on whether it developed amongst existing Island Melanesian culture(s), or whether it involved the arrival of a new group of people at around 3500 BP. In the following discussions these two competing views are distinguished as the indigenist (e.g. Allen and White 1989; Ambrose 1997; Gosden and Specht 1991; Terrell 1989; White et al. 1988) and the intrusionist (e.g. Bellwood 1997, 1998; Kirch 1988, 1990, 1997, 2000; Spriggs 1997).

The core of the argument between the indigenists and the intrusionists is the nature of the interaction and influence between outsiders and the resident Island Melanesian populations. The intrusionists argue that most of the changes which took place at the time of the emergence of Lapita were introduced from Southeast Asia, and have sought and identified features which occur in Southeast Asia prior to their appearance in Island Melanesia. The indigenists, on the other hand, suggest that external factors served only to mediate internal
developments. One of the main problems with this polarised debate ‘... is that positions depend on whether people, languages or archaeological assemblages are the issue of concern, and these categories are not always very precisely separated’ (Bellwood and Koon 1989).

2.5.1 The intrusionists

Spriggs (1997), an intrusionist, argues that many of the traits which define Lapita are of Southeast Asian origin, such as pottery (or at least particular kinds of pottery), domestic animals, quadrangular adzes, polished stone chisels, various shell ornament types, rectangular houses (some on stilts), large villages, Austronesian language, and probably aspects of boat technology, tattoo chisels, pearlshell knives, trolling hooks and various stone-artefact classes (Spriggs 1997: 101).

Both Kirch (2000: 88) and Spriggs (1997: 74-76) emphasise that sites of the immediate pre-Lapita period, such as Talasea in New Britain, indicate distinct cultural phases before and after the emergence of Lapita, the former being associated with the resident Island Melanesians pre-Lapita, and the latter with the incoming Lapita populations. Spriggs (1997) further suggests that the Witori eruption of New Britain 3600 years ago, archaeologically visible between the pre-Lapita and Lapita horizons, may have played a major role in facilitating the movement of the bearers of Lapita into Island Melanesia:

It is an intriguing possibility that the progenitors of Lapita were following an established trade route from the west, one that had suddenly shut down. Moving into a now empty landscape but with supply links back to the west which gave them the ability to establish themselves there, they may have gained control of [the obsidian source of] Talasea as an untenanted land or were at least able to insert themselves strategically into whatever system was trying to re-establish itself (Spriggs 1997: 76).

Historical links between the movement of Lapita and the spread of Austronesian languages across the Pacific have been claimed by the intrusionists (Bellwood 1989, 1991, 1997; Green and Kirch 1997: 27; Kirch 1997; Spriggs 1991, 1997). According to Pawley and Ross (1993), this fit between the linguistic and archaeological chronologies has been a source of criticism by indigenists who believe that archaeology should be considered independently of linguistic data because it has a different history to tell (cf. Terrell et al. 1997: 166). Terrell (1988) has suggested, for example, that the modus operandi of historical linguists has been adopted by many prehistorians such that the issues of origins and the development of branching patterns have come to dominate Pacific prehistory. The following description of Island Southeast Asian Proto-Austronesian (PAN) language splits by Spriggs (1997) – the
geographical patterning of which he contends bears a striking resemblance to that of 'an archaeological horizon or cultural complex' culminating in the Lapita region of Island Melanesia – is a case in point:

Proto-Austronesian (PAN), probably spoken on or near Taiwan, split into a Formosan and a Malayo-Polynesian grouping around 5000 BP or earlier with a movement south to the Philippines and Sulawesi. Proto-Malayo-Polynesian (PMP) broke up with a move from Sulawesi across to northern Maluku at about 4500 BP or slightly earlier. The next linguistic split (the break-up of Proto-Central/Eastern Malayo-Polynesian or PCEMP) occurred with a language movement to the east. This new settlement probably centred in Cenderawasih Bay on the north coast of Western New Guinea, perhaps (there are no dated sites in the area) around 4000 BP, where Proto-Eastern Malayo-Polynesian was spoken (PEMP). A further spread east resulted in an Austronesian and Lapita settlement in the Bismarcks by 3500 BP and the break-up of Proto-Oceanic (POC) as Lapita settlements spread south and east through the Solomons and out into the Pacific after about 3200 BP (Spriggs: 96-97).4

The relationship between distributions of archaeology and language is a common assumption in Oceania, and has led to a general acceptance among intrusionists that the break-up of POC coincided with the arrival of Lapita pottery (Pawley and Ross 1995: 59). Kirch (2000: 98) describes the Lapita region as ‘... a sort of core, out of which populations speaking Oceanic languages centrifugally expanded.’

According to Spriggs (1997: 99), the ‘genetic history established so far does seem consonant with the histories derived from the other two disciplines’ of archaeology and linguistics. Kirch (1997), who provides a detailed history of biological research directed at understanding Pacific origins, also claims that there is a ‘gratifying’ strong convergence between the archaeological, linguistic and genetic patterns. According to the intrusionists, the emerging patterns indicate that pre-Polynesian populations derived mainly from Southeast Asia and moved rapidly through Near Oceania (where some genetic exchange with existing populations took place) and thence to Remote Oceania, where they were most likely the founding colonists (Hagelberg and Clegg 1993; Hertzberg et al. 1989; Serjeantson and Hill 1989).

2.5.2 The indigenists

The core of the indigenist argument is that certain features of the Lapita cultural complex already existed in one form or another in Island Melanesia before the emergence of Lapita sites around 3500 BP. The implication is that Lapita is not entirely an introduced

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4Slight revisions to this chronology have been proposed more recently by Spriggs (1999: 22), who now places the break-up of PMP at around 4000 BP, and of POC at around 3200 BP.
phenomenon, but rather represents a continuation of internal developments (e.g. White et al. 1988; Smith 1995; White 1999). For example, it is suggested that obsidian exchange, already in operation during the late Pleistocene, underwent a period of expansion after 3500 BP. Certain plant domesticates utilised during Lapita times also appear to have emerged from pre-existing Island Melanesian domesticates, such as *Colocasia* taro, *Australimusa* bananas, sugarcane, coconuts and breadfruit (Green 1994: 36; Yen 1990, 1991). *Tridacna* shell adzes, a component of the Lapita cultural complex, were already present in Island Melanesia by 7000 BP (e.g. in Manus) (Frederickson et al. 1993: 149). Earth ovens have been dated to 6200 BP in New Ireland, and shell beads and *Trochus* shell arm-rings occur in pre-Lapita sites on Guadalcanal (Green 1994: 31). On the Willaumez Peninsula (West New Britain), Lapita sites are located in areas where previous occupation also occurred (Specht et al. 1991), suggesting some sort of continuity from the previous obsidian stemmed-tool phase in that region.

Ambrose (1997) presents the major tenets of the indigenist perspective, arguing that the weak fabric of the early Lapita pottery found in the Bismarck Archipelago is consistent with experimental pottery-making by groups perhaps only partially familiar with the craft (although see Summerhayes 2000a who suggests that multiple fabrics are associated with dentate-stamped ceramics). He states that the long history of sailing in the Bismarck, which extends back into the Pleistocene (as evidenced by the region-wide transmission of obsidian), is testimony to the sailing and navigational skills of the Bismarck populations. On this basis, he argues that local skilled seafarers may themselves have propagated the development of pottery-making through contact with groups to the west, and suggests that the gradual improvement of pottery fabric over time, particularly with the emergence of more utilitarian wares (such as Podtanean in New Caledonia and later Mangaasi-like wares), could reflect the learning curve experienced by budding potters. Thus, according to Ambrose, the notion that skilled potters arrived from Southeast Asia, as advocated by the intrusionists, runs counter to the evidence. Instead, as Ambrose (1997: 535) argues, ‘...sailing vessels were the signal innovation that led to other developments, including the incorporation of pottery into local Bismarck communities’.

Ambrose suggests that given the local development of sailing abilities over a very long period, by the time Lapita pottery was manufactured people probably favoured sheltered waters and areas of easy sea-access as settlement locations – the precise environmental conditions associated with Lapita sites. He further suggests that increases in such coastal settlement sites are indicative of a move from a pattern of dispersed settlement to one focussed on ‘canoe-centred locations’. In response to the intrusionist claim for a rapid
exploitation of settlement locations by incoming Lapita agriculturalists (see above), Ambrose suggests that it is equally feasible that 'coastal land clearance, gardening concentration and increased soil instability' were precipitated by indigenous moves to coastal 'canoe-centred locations' (1997: 534).

Upon finding Talasea obsidian in Sabah on the island of Borneo, intrusionists have argued that Lapita colonists of the Bismarck region were maintaining links to their Southeast Asia homeland (Bellwood and Koon 1989). But, as Ambrose observed, the Sabah site is 500 to 1000 years later than the Bismarck Lapita sites, which would imply a scenario in which Bismarck Islanders fostered continued links with their western forebears. Ambrose (1997: 535) concludes by stating that,

... no wave of migrants went out of Island South-east Asia to the Bismarck Archipelago with strong continuing links to a western Lapita 'homeland'. The Bismarck Archipelago was a relatively self sufficient region where selective acquisition of items by its mobile islanders was the standard pattern.

Terrell et al. (1997; and more recently Terrell et al. 2001) are equally critical of the intrusionist stance, not so much in terms of their notion that people entered from Southeast Asia around 3500 BP – indeed at least one of the authors suggests that a more balanced approach to the events of this time is required – but in terms of their research program for the Pacific. Terrell et al.'s (1997) primary criticism concerns the intrusionists' emphasis on origins and 'branching patterns', which, they say, has dominated the agenda of Pacific prehistory for decades. They trace this back to 'the myth of the primitive isolate' which, they suggest, has captured the imagination of Pacific archaeologists and led them to assume that the convergent distributions of languages, genes and customs can be mapped, and thus the prehistory of the Pacific understood. Terrell et al. (1997) wish to tell a story of Pacific prehistory that questions the need to explain the emergence of Austronesian languages in the Pacific through migration. Instead, they are keen to explore the role of interaction in cultural, linguistic and genetic diversification across the Pacific. More importantly, they are wary of the ability claimed by archaeologists to differentiate between similarity as explained by shared ancestry or as a result of social interaction (Terrell et al. 1997: 175):

[w]e should adopt as a working hypothesis the universality of contact and influence as a fundamental feature of human existence. We should think of social life and human history as a time and space continuum of human association, a weblike field of social relations, a social field...
Commenting on Irwin’s (1992) concept of a ‘voyaging corridor’, Terrell et al. (1997) propose that the development of Austronesian languages within the region was the result of contact and language convergence. However, this proposal is rejected outright by nearly all linguists (e.g. Ross 1988, 1997; Pawley and Ross 1995) who argue that the similarities between Austronesian languages can only be explained through shared ancestry.

2.5.3 A middle-ground approach

Terrell (1988: 642) has summarised the two main interpretative frameworks – intrusionist and indigenist – in Pacific prehistory:

In the first approach, Pacific prehistory is seen as the answer to questions long asked about the origins, migrations and historical relationships of different pre-existing races who are thought to have entered and colonized the region at different times. In the second (somewhat more recent) approach, the Pacific Islands are thought of as a geographic set of local and island populations more or less in touch with each other, who have followed separate but often connected historical pathways of local adaptation and culture change. The aim of this approach is to look for patterns of similarity and difference among the islands and how they live to determine exactly what circumstances, actions and events, when combined, explain their diversity.

I see this as an overly binary view of archaeological research in the Pacific, in that most authors (in their work overall, if not in individual papers) rarely forfeit one approach for the other. For the most part the indigenists allow for some outside influence to explain the emergence of certain features around 3500 BP, while the intrusionists recognise the impact that indigenous people would have had on incoming people or ideas (Bellwood 1997). Indeed, the general call now is for a balancing of ‘external and local factors’ (Gosden et al. 1989: 577; see also Kirch and Weisler 1994: 291).

This call is perhaps best answered by Green’s (1991b) ‘Triple I’ model which, as a compromise, regards the colonisation of Island Melanesia as a composite of intrusion, innovation and integration. Intrusion is the arrival of people and/or materials from outside the Lapita region. Integration is the incorporation of traits already existing in Melanesia into the ‘Lapita Cultural Complex’. The concept of innovation is designed as a possible explanation for the appearance of features which have no antecedents in the west or in Island Melanesia itself, the obvious example being Lapita dentate-stamped ceramics which, apart from two possible sherds on or close to the New Guinea mainland (Swadling et al. 1988; Terrell and Welsch 1997: 559), are restricted in their distribution to Island Melanesia.

More recently, Green (2000) has revised the Triple I model to take account of criticisms directed at his methodology for differentiating between elements which may be intrusive or a
product of integration. For instance, as Spriggs (1996a) has noted, Lapita elements which occur in pre-Lapita assemblages in both Island Southeast Asia and the Bismarck Archipelago cannot be seen as evidence of local integration. Green (2000: 374) therefore distinguishes Island Southeast Asian intrusions on the basis that Lapita elements must occur in pottery-bearing contexts in Island Southeast Asia between 3400-4000 BP or before.

One aim of this thesis is to assess the relative impacts of integration, intrusion and innovation on artistic systems around 3300-3500 BP. What is certain from the foregoing discussion is that a restructuring of social systems took place around this time in Island Melanesia. Processes of integration, intrusion and innovation are each likely to have usurped aspects of artistic systems entering, or already existing in, Island Melanesia, such that certain artistic conventions were lost, replaced or modified. For example, for various reasons (e.g. a lack of suitable resources) visual symbols entering Island Melanesia on some media, such as barkcloth, may have quickly been transferred to rock or other media (a concept raised by Green in 1979; see also Spriggs 1989; Kirch 1997). Indeed, if this sort of process was occurring, then attempts to trace Island Melanesian design elements back to an origin somewhere in Southeast Asia would be futile.

This issue of design transference is pertinent to the appearance of dentate-stamped Lapita pottery in Island Melanesia around 3500-3300 BP, for which no western prototypes have been located. One explanation offered by Bellwood and Koon (1989: 612) is that the archaeological signatures of the Lapita cultural complex, apart from the basic techniques of pottery making and firing, were not introduced fully formed into Melanesia from some region of Indonesia, but evolved during the colonisation process itself.

Reasons for the appearance of Lapita pottery are unclear, but it has been suggested that there was perhaps a desire to develop a medium that could be exchanged and used to maintain links between people extended across islands separated by many hundreds of kilometres. The distinctiveness and unity of the pottery design, both in structure and content, may have developed in accord with the colonisation process, such that ties with homelands were not severed. Or perhaps, as Ambrose (1997: 527) notes, Lapita ‘indicates some common purpose by its uniformity: from despotic coercion, or self-imposed emulation, or carrying some special message for resourceful explorers who became nostalgic ultra-conservative settlers, or the simple result of adopting specially made dentate-stamping tools to execute the designs’. The interpretative possibilities seem endless and unavoidably speculative. However, as noted in the introduction to this thesis, patterns derived from both pottery and
rock-art offer greater interpretive potential than models derived from only one of these sources of evidence. We can begin, at least, to generate ideas about the geographical extent of design systems, and to make more definitive statements about the spatial origins of these systems. If, for example, the stylistic conservatism associated with Lapita pottery is also present in aspects of rock-art in the same region, then we may need to revise models which attribute the emergence of such art systems to incoming populations.

Comments by Terrell (1989), Bellwood and Koon (1989), and others regarding the nature of Lapita are relevant here. While some of the archaeological signatures of Lapita suggest a complex confined to Island Melanesia and West Polynesia, the extension of trading networks beyond this region during the Lapita period (from c. 3500 until c. 2700 BP) means that any analysis of art systems at this time must take into consideration possible two-way impacts (through direct or indirect contact) between design systems in Southeast Asia and Island Melanesia. One only has to look at the apparently instantaneous spread of metal into Island Southeast Asia around 2200 BP, which included Manus in the Bismarcks (Ambrose 1988), the presence of Talasea obsidian in Borneo (Bellwood and Koon 1989), and the similarities between Lou Island’s double-spouted pottery vessels and those in northern Sabah (Kennedy 1982), to recognise that two-way contacts existed. The introduction of metal and the subsequent spread of Dong-son influences (into eastern Indonesia and western New Guinea c. 2000 BP) also seem to mark the beginnings of the region’s trade in spices and other natural products (Swadling 1997, Spriggs 1998).

That design systems were transferred in both directions between Southeast Asia and Island Melanesia has been proposed by Spriggs (1989), who suggests that the late appearance of decoration on pottery in Southeast Asia could have been inspired by the Lapita pottery-making complex further east. The lime-infilling of the later Southeast Asian pottery, a feature of Lapita ceramics, is a possible clue in this regard. Contacts between Southeast Asia and Island Melanesia during the ‘Metal Age’ may have impacted on rock-art production throughout the region, and may provide some clue as to the timing of the emergence of particular rock-art styles. Ballard (1988b: 154-5) has previously noted, for instance, a resemblance between rock-art motifs found in Eastern Indonesia and those found on bronze artefacts. Based on this and other comparative evidence he argued that a particular tradition of red painting emerged in the western Pacific around 2000 years ago. While Spriggs (1989) has argued that the arrival of metal marks a time when the archaeologies of Island Melanesia and Island Southeast Asia begin to diverge, until we have a more concrete understanding of the cultural histories of regions immediately to the west of Island Melanesia (i.e. West Papua and eastern Indonesia) the nature of post-2000 BP links remain tentative.
2.6 Out to Polynesia

While the rock-art of Polynesia is not directly addressed in this thesis, the results of an examination of Island Melanesian rock-art feed into debates concerning the Polynesian region. For example, the degree of similarity between the earliest rock-art of Island Melanesia and Polynesia could be significant in addressing the question of the length of the colonisation pause in Fiji-Western Polynesia, and also the speed of the colonisation of Island Melanesia.

Lapita colonists are thought to have reached Fiji-Western Polynesia no earlier than around 2900 BP (Anderson and Clark 1999). The precise timing of the first crossing of the Andesite Line to the islands of Central and East Polynesia remains in contention. Most researchers agree that colonisation halted in Western Polynesia for between 1000 and 500 years. Spriggs and Anderson (1993: 211) argue for a longer break (up to 1500 years) suggesting that East Polynesia was settled no earlier than 1650-1350 BP, whereas Kirch and Ellison (1994) argue for a pause of no more than about 500 years, based on evidence of anthropogenic impacts on Mangaia from as early as 2500 BP. Irwin (1992) suggests a virtually instantaneous colonisation of Polynesia with no pause in Tonga and Samoa, although later concedes that the evidence for both an early and a late settlement of East Polynesia is ‘open to criticism’ (Irwin 1998: 136).

Kirch and Green (1987) propose that ‘Ancestral Polynesian Society’ first emerged during this pause in the colonisation process in Fiji-Western Polynesia, although Green (1994: 42) is cautious on the matter of its likely character:

Reconstructions of Ancestral Polynesian Society using linguistic, biological and archaeological evidence are still very tentative. The methods to be used are fairly well understood (Green 1986; Kirch & Green 1987), but the evidence on which they are based is still too limited to ensure any certainty. Something is known of the technology and economy which is, not unexpectedly, typically Polynesian (Kirch 1984, pp.53-62), but aspects of the housing, settlements, social and religious organisation and art remain inferential and controversial (Dye 1987; Green 1979; 1986; Kirch 1984, pp.62-69; Sutton 1990). However enough is now known to make it unprofitable to seek Polynesian origins elsewhere in Asia, the Pacific, or South America. Rather they are to be found within the western region of Polynesia itself with antecedents in the Eastern Lapita cultural complex and its associated language and people.

Whether or not the colonisation pause in Fiji-Western Polynesia was long or short, there is a general consensus that the subsequent colonisation of Central and Eastern Polynesia occurred relatively rapidly,
starting around 1600-1300 BP. Most of East Polynesia was first settled between 2000 and 1000 BP: the Marquesas in AD 300-600, Hawai‘i at about AD 650, the Cooks and Tahiti at about AD 750-800 and Rapanui (Easter Island) towards the end of the first millennium. New Zealand was first settled even later, in the period AD 1000-1200 (Spriggs, in Denoon 1997: 64).

Kirch and Green’s (1987) assertion that all Polynesian cultures derive from the Lapita Cultural Complex originating in the Bismarck Archipelago, and their idea that linguistically and biologically the Polynesians form a cohesive group deriving from a single ancestral population, led to their construction of the ‘phylogenetic model of evolution’. This model is founded on a notion of cultural continuity, such that an underlying cultural substrate in Polynesia can ultimately be traced back to an origin somewhere in Southeast Asia. Linguistic, genetic and cultural traits are often considered in combination in the search for prototypical forms. Art has also been subjected to this form of analysis, with Green (1979) claiming similarities between the decorative elements on Lapita pottery to the west (in Island Melanesia), and ethnographic barkcloth designs in Polynesia.

2.7 The colonisation of Micronesia

Although little rock-art has been discovered or systematically recorded in Micronesia, the presence of certain rock-art motifs (e.g. the enveloped cross) hint at direct cultural connections with Island Melanesia where the same motifs occur. In this section the history of settlement in Micronesia is briefly outlined to provide a historical context for a later analysis of rock-art at a site on Pohnpei in the Caroline Islands (Chapter 4).

There appear to have been two main colonisation episodes in the islands of Micronesia, the first movement at around 3500 BP into the Marianas (Butler 1994), and the second around 2000 BP when the rest of Micronesia was settled (Rainbird 1994) (Figure 2.1). Intoh (1997), however, argues for a four-stage colonisation which includes a dispersal from the west to Palau and Yap about 2000 BP, and a later Polynesian dispersal to the atolls of Nukuoro and Kapingamarangi. The languages of Micronesia are all considered to be part of the Austronesian language family, but those of the Marianas and Palau are very different both to each other and to the Nuclear Micronesian languages spoken in the Caroline and Marshall Islands to the east (Rainbird 1994: 299). The language of Yap is considered to be different again, with some relationships to the languages of the Admiralty Islands (Manus) (Ross 1996).

The first people to have ventured to the Marianas are thought to have derived from different western origins, perhaps eastern Indonesia, Taiwan or the northern Philippines. Both the
linguistic and ceramic lines of evidence suggest the most likely origin to be the Philippines (Reid 1998; Spriggs 1999).

Several Micronesian archipelagos were settled at about 2000 BP, around the same time as the supposed Lapita-related settlement of coastal New Guinea. On the basis of a shared ceramic tradition in the form of Lapita plainware, Athens (1990: 29) suggests that the islands of Yap, Kosrae and Pohnpei were most likely colonised from either the southeast Solomon Islands or Vanuatu. Ayres (1990) favours a less geographically confined origin in southeast Melanesia and/or Fiji-West Polynesia.

In order to engage rock-art within debates concerning the colonisation and settlement of Micronesia, in Chapter 4 the rock-art of one of Micronesia’s most intensively recorded sites (from Pohnpei) is compared to rock-art motifs from elsewhere in the western Pacific. The broadly accepted settlement date of 2000 BP for Pohnpei (Rainbird 1994; Irwin 2000; although see Ayres et al. 1981) provides an important maximum age for this rock-art.

2.8 The demise of Lapita?

The study of the events associated with the Lapita period have for a long time dominated the research agendas of Pacific archaeologists. As a result, our knowledge of the subsequent periods remains somewhat sparse. Of the various propositions that have been put forward to explain the demise of Lapita, the most significant have been summarised by Spriggs (1992: 222):

1. trade system contraction/specialisation
2. local adaptation
3. sociopolitical transformation
4. absorption
5. secondary migration.

Spriggs (1997) has recently explored each of these aspects in detail, reaching much the same conclusion he did five years previously (Spriggs 1993a), that the main emphasis in Pacific archaeology to date has been the collection of data, and that the gaps in our knowledge are as yet too great to pinpoint which of the above options (or an alternative) most closely fits the evidence. As he points out (Spriggs 1993a, 1997), the archaeological signatures for each of these options might look very similar.
Around 2000 BP various cultural changes are witnessed across the Western Pacific, including the colonisation of various archipelagos in Micronesia, and transformations in settlement pattern and material cultures in the Massim and on the south Papuan coast (Lilley 1999). Both of these are possibly, but not securely, related to late population movements correlating with the expansion of Oceanic speakers (Kirch 2000: 127). The arrival of the ‘Metal Age’ in Island Southeast Asia is also a turning point in the nature of contacts between Island Southeast Asia and Island Melanesia at this time, involving the movement of a new set of material items with distinctive decorative motifs (Spriggs 1989; Bellwood 1997).

A number of volcanic events in the Bismarck Archipelago are reported to have occurred over the last 2500 years, disrupting the settlement of the region. Around 1400 BP there was a massive ‘sterilising’ eruption at the northeastern tip of New Britain which resulted in the creation of Rabaul Harbour. On Watom, 16 km away, a tephra ashfall is said to have led to the temporary abandonment of the island (Kirch 2000: 129). As demonstrated later in this thesis, such events can be important for providing maximum ages for rock-art assemblages. In the Rabaul case it may also be possible to attribute the production of the art from this region to the Tolai who, according to oral tradition, moved into the Rabaul area during the period subsequent to the eruption (Salisbury 1972; Green and Anson 2000).

Some researchers have suggested that elements of the Lapita cultural complex in Island Melanesia endure after the disappearance of dentate-stamped pottery (between c. 2700 and 2100 BP) (Kennedy 1982, Spriggs 1984b, 1997). Drawing largely on the results of Wahome’s (1997) ceramic study, Spriggs (1997) argues for broad synchronic changes across the region from the ‘classic’ Lapita period through to the Mangaasi period (defined by ceramics decorated with incised and applied relief styles). Such continuities are thought to persist until as recently as 1500-1000 BP (Spriggs 1997: 162), after which time networks of interaction and exchange become significantly contracted (and/or realigned), and material assemblages begin to express far more regionalised behaviour. This notion of ceramic continuity, however, has recently been challenged by Bedford (2000) and others (e.g. Clark 1999), who propose that the apparently region-wide ‘Incised and Applied Relief Tradition’ is more plausibly a result of independent evolutionary processes from a Lapita baseline rather than a result of continued interaction.

Spriggs (1997: 161) attributes the overall lack of archaeological visibility during the period from 2000 BP to around 700 BP to the fact that many areas abandoned pottery production and use (eg. Mussau, the Arawes, Talasea and parts of the Solomon Islands). But in some areas pottery continued, as in the cases of Sasi and other plain, incised and relief wares on
Manus (Ambrose 1988, 1991; Kennedy 1982, 1983), Sio, Madang and Type X pottery in the Vitiaz Strait (Lilley 1988), and Lossu and Lasigi pottery on New Ireland. Plain ware and incised pottery, imported from further north, is said to be found on Nissan until 750 BP (Spriggs 1997), and varieties of incised and applied relief styles are found on Buka for the same period. Three pottery styles – Sivu, Asio and Pidia – have been defined in central Bougainville, and various incised, stick and fingernail impressed and rarer applied relief ceramics have been found in New Georgia (on Ndora). Incised and applied relief pottery (probably derived from northern Vanuatu) occurs on both Tikopia (where it is known as Sinapupu) and Vanikoro (Kirch 2000: 135). Incised and applied relief wares also occur throughout Vanuatu, ceasing in the southern islands around 2000 BP but continuing in the central islands until around 1200 BP. Only on Santo is there evidence of pottery production into the European contact period. In New Caledonia, Balabio pottery has been identified in the north and the Plum style in the south, both styles beginning around 2000 BP. The former is regarded as an offshoot of Podtanéan (considered to be part of the ceramic production of the first Lapita settlers; Sand 2000: 27), and the latter a development of Puen pottery. Around 950 BP two new pottery forms emerged in New Caledonia: Oundjo in the north and Nera in the south (Spriggs 1997: 188). The dates for the emergence of some of these post-Lapita ceramics are important to this study as they assist in the development of a relative chronology for regional rock-art assemblages. The Plum pottery, for instance, which emerged around 2000 BP, includes enveloped crosses among its repertoire of motifs. These motifs are ubiquitous among both painted and engraved rock-art assemblages throughout the western Pacific.

There is no doubt that scholars have paid far more attention to the Lapita cultural horizon than to subsequent timeframes (Terrell 1993: 22). Caution needs to be exercised, therefore, when referring to the post-Lapita period. The apparent dwindling of the main signatures of Lapita does not necessarily infer a process of ‘regionalisation’, such that communities were in less contact with one another. For instance, in their recent study on the north coast of New Guinea, Terrell and Welsch (1997) argue that changes in pottery style occurred even when levels of interaction were not noticeably reduced.

Heeding these cautions, each of the contrasting views concerning post-Lapita interaction are directly addressed in this thesis through a comparative analysis of rock-art. Stylistic transformations in pottery sequences throughout the region are compared with chronologically comparable transformations in rock-art assemblages. The degree of similarity between motifs, and continuities and discontinuities in style sequences, are assessed as a potential measure of the level of interaction across the region.
2.9 The last 700 years

Much of what has been said of the last 700 years of history in the Pacific Islands has been derived from ethnography. Of particular interest to the central theme of this thesis is the potential impact on art systems of the recent Polynesian ‘backwash’ movements into Island Melanesia during this period. The difficulty, however, is being able to differentiate social circumstances which have evolved from Lapita beginnings from those which represent later intrusive influences. Some scholars, for instance, would attribute the chiefly organisation seen in Island Melanesia today to the influence of a recent backflow of Polynesian people into Melanesia within the last thousand years. But, as Spriggs (1993a: 198) asks,

Do the chiefdoms represent recent innovations in sociopolitical organisation under Polynesian influence or intrusion (‘elite dominance’ in Renfrew’s [1987] term), or are they continuities from Lapita, perhaps with superficial trappings?

Various rock-art motifs found in Vanuatu, particularly on Maewo and Erromango, closely resemble rock-art motifs found in Polynesia (especially the Marquesas and Hawai‘i). The question is whether rock-art motifs found in Vanuatu and other Island Melanesian societies are proto-Polynesian forms, or the result of later migrations or contacts from Polynesia.

2.10 Conclusion

The rock-art of Vanuatu and other western Pacific regions can only be understood if it is placed in a broader archaeological context. Accordingly, this chapter has aimed to establish such a context for interpreting the results of rock-art analyses presented in later chapters. I conclude by offering several methodological procedures that might allow us to employ rock-art to address some of the issues and debates raised thus far:

1. While some authors (e.g. Spriggs 1997) may feel that Pleistocene (or indeed early- to mid-Holocene) rock-art is unlikely to be found in Island Melanesia, the possibility cannot yet be discounted. However, the absence of Pleistocene decorative elements on non-rock-art media restricts the likelihood of being able to date Pleistocene rock-art by comparative means. ‘Direct’ dating methods, such as AMS radiocarbon, are likely to be the only way of ascertaining the earliest ages of the rock-art of the islands with any confidence. As a preliminary measure, however, it can be assessed whether the rock-art from sites known to contain Pleistocene deposits is similar to or different from rock-art known to have been produced in later periods.

2. After about 3500 BP there is evidence for major cultural transformations in the Pacific, including a possible influx of people and language from Southeast Asia, an expansion of
trading networks, the colonisation of Remote Oceania, and the emergence of various new items of material culture, including dentate-stamped pottery. The archaeological signatures of the Lapita and immediate post-Lapita period (c. 3500/3300-2000BP) suggest that an extensive network of interaction existed during this time. While debates continue as to ‘who’ was involved in this interaction, and about its precise nature, the presence of a cohesive and similar set of material culture items across a vast region would seem to suggest a shared ancestry and/or the presence of continued communications throughout the Lapita period (and possibly up to 1500 BP). If rock-art was being produced in Vanuatu during the Lapita period, we might expect a more or less unified set of conventions throughout much of this archipelago, as well as in the Bismarcks, the Solomons, New Caledonia and Fiji.

3. Green and Kirch (1997) have suggested that during the Lapita period the islands of the Bismarck Archipelago were involved in more extensive inter-regional interaction than those of Remote Oceania (including Vanuatu) through which the ‘colonisation front’ was apparently passing rapidly. It might be possible to test this proposal in Vanuatu. If the colonisation front did move quite quickly through Vanuatu, rock-art conventions would be almost identical to those in surrounding regions, especially those from the closest parts of Remote Oceania. A slow-moving front, on the other hand, would presumably leave more time for generative design modification.

4. Anderson (2001) has noted that Lapita colonisation accelerated in an easterly direction but that the length of ‘Lapita tenure’ decreased. It should follow, therefore, that rock-art bearing the signature of the Lapita period decreases in an easterly direction.

5. The speed of the colonisation front and the extent of the colonisation pause in Fiji-Western Polynesia can also be assessed via an examination of rock-art in Central and Marginal Polynesia. Strong polytypic similarities between the earliest rock-art assemblages of Remote Oceania would attest to a fast moving front.

6. The intrusionist-versus-indigenist debate provides a central focus of this thesis. Artistic traits which may either have entered Melanesia from Southeast Asia or developed through local innovation are sought, taking into account that two-way contacts with Southeast Asia after about 3500 BP were likely, and that these may make the identification of ‘ancestral traits’ difficult.

7. Information on exchange systems between Vanuatu and other islands is limited for the period after 2000 BP, although major transformations in social and economic life, and major movements of people, appear to have occurred throughout the region from this
time. Some scholars (Wahome 1997; Spriggs 1997) have argued that synchronous changes in ceramic styles throughout Island Melanesia are indicative of persistent interarchipelagic interaction up until perhaps 1000 BP. Others (e.g. Bedford 2000) suggest that inter-island similarities in ceramics reflect parallel evolution from a common Lapita baseline. Unlike pottery, rock-art is fixed in the landscape, and is thus an ideal medium for assessing these opposing views. First, the degree of similarity between rock-art assemblages across the western Pacific will be evaluated through an analysis of motif and non-motif variables. This will enable some assessment of Wahome’s (1997) conclusion that inter-regional ceramic similarities are a result of continuous interaction. Second, the degree of continuity within rock-art sequences will be examined to see whether transformations in rock-art reflect an evolution from a common baseline. If major digressions are observed in patterns of rock-art across Island Melanesia (as opposed to design continuity) then factors other than a shared ancestry may need to be invoked in explanation.

8. In the statistical comparisons of western Pacific rock-art in Chapter 4 a rock-art site from the island of Pohnpei, located in the Caroline Islands of Micronesia, is included. According to Rainbird (1994) this island was colonised around 2000 BP, thus providing a maximum age for the island’s rock-art. The objective is to determine whether the motif range in the rock-art of Pohnpei also occurs in Island Melanesia and, in turn, whether it might be possible to identify a homeland, or at least an interaction sphere, which may have influenced its production.

9. The impact on the rock-art of Island Melanesia of Polynesians during the last millennium is also addressed via the analyses of Chapter 4. In doing so, however, I note Spriggs’s (1993a) warning about the difficulty of teasing out similarities as derived from shared ancestry (e.g. Polynesian prototypes) from those which may have been the result of later contacts between Melanesian and Polynesian peoples. However, without conducting a more detailed and formal comparison between the rock-art of Polynesia and Island Melanesia (a task deserving of future study), potential influences between the art systems of these two regions can only be inferred in a preliminary way.
3

Pacific rock-art: a summary of research

The drawings, hand stencils and engravings all seem to tell a different story. (Ollier et al. 1970: 27)

3.1 Introduction

The aim of this chapter is to develop a preliminary spatial and temporal framework for the rock-art of the Pacific as a context for interpreting the results of the statistical analyses presented in later chapters. Several authors (Specht 1979; Rosenfeld 1988; Ballard 1992a) have proposed the existence of broad spatial and temporal patterns in western Pacific rock-art. In general, these patterns have been situated within popular interpretive frameworks constructed from other types of evidence (such as archaeology, linguistics or genetics). For instance, when Rosenfeld (1988: 134) noted that 'the existence of certain recurring motifs throughout the area suggests that developments have occurred through differential adoption and adaptation from shared origins', she was drawing directly on the ‘intrusionist’ orthodoxy which (based largely on a linguistic model) seeks to identify branching patterns from a common source region. While such a notion of unity (and continuity) has influenced much rock-art research undertaken so far in the western Pacific, it has hitherto been based on a rather limited data set. With a considerable body of new information now available, it is timely to review the existing data and models derived from them.

This chapter is presented in two sections. First, I review the existing models for western Pacific rock-art in order to outline the issues and debates which have evolved over time and to aid in the development of an analytical agenda for this thesis. Second, I present a region-by-region description of the rock-art of the Pacific, with an emphasis on the distributions of motifs and with the ultimate aim of generating questions which can be answered via the comparative analyses conducted in Chapter 4.

Each region generally corresponds to a current political territory which is unlikely to reflect socio-historical relationships. I use these regions as a heuristic device as I have no prior knowledge of how rock-art sites across these boundaries may be historically related. The level of detail in the descriptions of rock-art in each region varies in accordance with the
amount of published and unpublished material available,\textsuperscript{5} and in relation to what each region can offer in terms of reconciling some of the main issues raised in this thesis.

\textbf{3.2 Previous regional models of western Pacific rock-art}

One measure of the lack of interest shown by archaeologists in rock-art is the absence of any regional reviews until 1974, when an honours student, David Hugo, undertook a comparison of motifs from rock-art sites in New Guinea. As stated in Chapter 1, prior to Hugo’s (1974) work comments were restricted to the rock-art of a site or regional assemblage (e.g. Röder 1956, 1959). Given that this thesis concerns regional connections between rock-art sites and how these connections inform about historical processes of colonisation and post-settlement interaction, in this section I review and appraise four individual studies which have previously attempted to make some sense of the relationships between rock-art in the western Pacific.

\textbf{3.2.1 David Hugo (1974)}

As part of his 1974 Honours thesis at the University of Queensland, David Hugo conducted a comparison of painted and engraved rock-art in Papua New Guinea. His results, derived from presence and absence matrices for selected motifs and motif categories, revealed some overlap between the motif ranges defining engraved and painted assemblages. While the Highlands of Papua New Guinea were seen to stand out in terms of the number and range of painted motifs present (and the lack of engraved rock-art), coastal engraved and painted rock-art sites were shown to share several similarities, particularly in terms of non-figurative motif categories (e.g. circles). The parallels observed between the two media were tentatively linked to common influences on the different art media from Southeast Asia. However, some quantitative differences were noted between the two media. For instance, painted rock-art sites were found to be characterised by higher numbers of figurative motifs, such as ‘ancestor figures’, anthropomorphs, and lizard-crocodiles (Hugo 1974: 49). Enveloped crosses were also seen to be twice as common among painted assemblages as in engraved assemblages.

It is difficult to assess the merits of Hugo’s study. While he provided a reasonably extensive list of illustrated motifs in an appendix to the thesis, it is unclear from his descriptions how many sites were included in his analyses, or how he derived the motif categories used. With the benefit of hindsight, Hugo drew one particularly important conclusion based on the distribution of engraving sites:

\textsuperscript{5}Large quantities of information are available for the rock-art of Papua New Guinea, and particularly the New Guinea Highlands. Some of the most active reporters of rock-art are speleologists who have
... there appears to be a restricted spread of rock engraving techniques – limited to the Island Melanesian sites and a few inland and coastal sites near to this island region (Hugo 1974: 51),

As I will attempt to demonstrate in this thesis, the perceived difference between the distributions of painted and engraved rock-art has become a fundamental tenet upon which models of western Pacific rock-art have been developed.

3.2.2 Jim Specht (1979)

In 1979, Jim Specht published a major paper on western Pacific rock-art in which he examined 383 sites between Torres Strait and Tonga. This was the first study to synthesise existing rock-art data on a regional scale and to offer systematic analyses. One of Specht’s (1979: 58) aims was to compel researchers to ‘... move beyond a purely descriptive approach and start asking questions that would enable rock-art to become integrated into mainstream western Pacific research’.

Due to the essentially ad hoc and inconsistent way in which rock-art sites had been recorded in the past, Specht was unable to analyse traits such as site extent, the accessibility of the art (height above ground level), motif form, composition, chronology, and style. He was, however, able to examine the distribution of features such as rock-art techniques, geology, pigment colours and site topography.

Nine of Specht’s major findings are outlined here.

1. Echoing Hugo’s earlier finding, one of the major outcomes of Specht’s study concerned the spatial patterning of artistic techniques (Fig. 3.1). Painted rock-art was found to predominate in the west (Torres Strait, Indonesia and Papua New Guinea) and to occur in both coastal and highland regions (i.e. the New Guinea Highlands), while engravings were shown to occur mainly in the east (Island Melanesia, Fiji, Samoa and Tonga) and to have a predominantly coastal distribution. The New Britain and New Ireland area, and perhaps also Milne Bay, appeared to be ‘intermediate between the two areas of technique dominance.’ (Specht 1979: 63). Overall the distribution indicated an eastward reduction in the incidence of painted art and a corresponding increase in engraving.

documented most of their findings in the journal Nuigini Caver.
2. Specht observed that distributional differences between painted and engraved rock-art correlate with several biogeographical and cultural divisions. Vitiaz Strait is a major biogeographic boundary separating the island of New Guinea from the Bismarck Archipelago. Painted rock-art was seen to be more prevalent to the west of this ocean gap, and engraved rock-art more prevalent to its east. It is within the Bismarck Archipelago – where engravings begin to dominate – that the earliest signs of the ‘Lapita Cultural Complex’ have been found (see Chapter 2).

3. Another regional trend observed by Specht (1979: 70) was that rock-art sites tend not to be located within current habitation areas. This point had also previously been made by White (1972: 51) for the Papua New Guinea Highlands, and Kamminga (1972) for sites in Morobe Province.

4. Specht also looked at the relationship between rock-art and geology, noting that ‘... painting occurs mostly on limestone whereas engraving occurs mostly on rocks of igneous origin.’ (1979: 65) (Figs. 3.2, 3.3). This trend was said to occur irrespective of the presence or absence of either geological type in the same region. For this reason Specht (1979: 65) proposed:

   a conscious selection of rock type for a certain technique or vice versa. Painting requires backgrounds against which the colours will be visible, and for this the light-coloured surfaces of coral limestone are ideal; perhaps the dark surfaces of igneous rocks were considered unsuitable for painted designs. In areas where only limestone seems to be present, as in the MacCluer Gulf of Irian Jaya or along the coast near Sialum in the Morobe District of Papua New Guinea, only paintings are found. In New Caledonia a wide variety of rocks, including sedimentary types, have been used for rock art, but the only technique represented is that of engraving. The absence of painting may be related to the absence of recently raised coral limestone.

   Two exceptions to this pattern were observed. One was in Talasea where a series of red paintings were reported on volcanic tuff. Specht’s explanation for this was that since the tuff is light in colour it may have provided a good contrasting background for the paintings. The other was the Hapao site (near Finschhafen, Morobe Province), where engravings occur on a limestone boulder. In this case, Specht argued that the darkness of the boulder may have rendered it more suitable for engraving than painting.

5. Also noted was that most painted art (90%) is located on surfaces which are in some way protected from the weather (e.g. caves or shelters) (Specht 1979: 67). In contrast, most engraved rock-art sites (80%) were found to be located on exposed boulders in open contexts, such as on or adjacent to rivers, near the sea, or on valley or hill slopes.
6. Specht also found that red painted rock-art occurs at more than 50% of painted sites, and that black is the second-most frequent colour used (1979: 63). Other colours, including yellow, white, green, brown and blue, were found to have a relatively sparse distribution.

7. Hand and foot stencils were discovered in 36 of the 383 sites and, in such cases, red was the main colour used. Black and red hand stencils were rarely found to occur at the same sites, Vanuatu being the only exception. The number of sites with black hand stencils appeared to increase towards the east. Hand prints were found to be much rarer than hand stencils, with only a few examples occurring in the Baliem Valley (West Papua) and Central Province, Papua New Guinea (Specht 1979: 64).

8. Specht also noticed variations in the incidence of rock-art between sites on a local scale. For example, at Hapao (see above), only one amongst many boulders is engraved, whereas at Malapapua (West New Britain), the majority (over 100) of the existing boulders are decorated.

9. In summing up his findings, Specht tentatively proposed the presence of a 'style' for the engraved rock-art of the western Pacific. This style was said to be based on similarities between motifs and other characteristics at various engraved sites at Goodenough Bay, New Hanover, New Caledonia, New Britain and Vanuatu, where motifs were said to consist of 'generally curvilinear geometric forms such as spirals, concentric circles, facelike forms, and various other concentric forms' (Specht 1979: 74). Specht (1979: 74) noted that, in addition to sharing common motif forms, these sites share other features: they are all on boulders or open rock faces, never in caves or shelters; they are all situated by water courses or the sea; and they are all in areas where Austronesian languages are spoken today. The similarities between these sites are sufficient to suggest that they constitute a widespread rock-art style. To this group could, perhaps, be added several painted sites which seem to share in common certain designs.

While Specht acknowledged the scope for a cross-over between painted and engraved rock-art motifs, his study was not focused on the degree of comparability between the two media or the precise nature of the motifs involved. One of the objectives of this thesis is to provide some exegesis of the extent to which painted and engraved rock-art articulate with one another through time and space, and to determine whether formal similarities between the two media are historically meaningful.
3.2.3 Andrée Rosenfeld (1988)

Specht’s pioneering review of the rock-art of the western Pacific was followed almost a decade later by that of Andrée Rosenfeld (1988). While Rosenfeld was cautious about presenting a synthesis limited by a paucity of rock-art and complementary data, she nevertheless specified some general patterns. As had been the case with Specht’s earlier review, a lack of chronological evidence limited Rosenfeld’s ability to situate the rock-art within a temporal framework.

Although Rosenfeld observed considerable localisation of artistic expression across the western Pacific, especially in the MacCluer Gulf and in the Highlands of Papua New Guinea, she noted that much of the rock-art of the region appeared to be homologous. She commented on an overall lack of animal depiction in the region (with the exception of ‘fish’ in some coastal sites), instead observing a predominance of non-figurative and anthropomorphic motifs.

Like Specht (1979), Rosenfeld saw minimal overlap in the motif ranges of engravings and paintings for the region as a whole, leading her to suggest that ‘it seems valid to examine the art of the region within the framework of two major artistic traditions’ (1988: 134). She did qualify this statement, however, noting that the occurrence of particular motifs, such as the enveloped cross, in both painted and engraved assemblages might have rendered this twofold schema an oversimplification. On the basis of continuities observed in the engraving component, which Rosenfeld observed as being at its ‘fullest... development’ in New Caledonia, it was tentatively suggested that New Caledonian engravings represent the outgrowth of a tradition that began in the west and, through time, moved eastwards.

3.2.4 Chris Ballard (1992)

Chris Ballard (1992a) extended Specht’s (1979) analysis by examining painted rock-art in the western Pacific and its relationship to certain locational characteristics and language areas. Inspired by similarities in painted motifs across the region (from Timor in the west to Bougainville in the east), Ballard sought to understand the rock-art of Western Melanesia within a broader historical framework. He examined 187 sites in relation to the following four variables:

1. Distance from the nearest current coastline;
2. Topographic or physical context:
   i. cliff-faces only;
   ii. caves and/or within cliff-face;
   iii. caves set in uplifted coral terraces;
   iv. caves or rock shelters only;
v. boulders;
3. The maximum height (in metres) of the location of the art at each site;
4. Whether the art was located in Austronesian or non-Austronesian-speaking area at the
time of European contact.

Ballard’s sample of sites containing painted art included those previously considered by
Specht plus an additional 63, increasing the total number of documented rock-art sites
(including engraving sites) in the western Pacific to 446.\(^6\) Ballard considered sites from
locales which had been intensively surveyed (IS), and from areas which had received only
cursory attention.\(^7\) Of the 187 painted art sites sampled, 110 derived from IS areas, and 77
from non-IS areas.

Not every site in Ballard’s sample had information relating to each of the four variables
listed above. Bearing this in mind, Ballard generated the following results:

1. Most western Pacific sites with painted art were found to occur within 1km of the
current coastline (Fig. 3.4) and in ‘cliffed’ contexts (cliff faces and caves within
cliffs; Fig. 3.5).

2. Of the 92 sites with known distances from the coast, 92% were found to be sea-
cliffs.

3. Twenty-four of 31 sites were found to display rock-art located 5m or more above the
base of cliffs.

4. ‘High visibility’ was found to co-occur with ‘inaccessibility’. Painted rock-art was
noted in highly visible locations, such as on exposed cliff faces or at or near cave
entrances often visible from the sea. A high degree of correlation was found
between painted sites and current Austronesian-speaking communities. Such a
correlation became most apparent when the IS sites were omitted from the sample
(Fig. 3.6).

Ballard derived a number of conclusions from his results. First, that the lack of an oral
tradition for the rock-art provides a *terminus ante quem* for its production (at least prior to
contact in most places). Second, that the geographical correlation of the art with the

\(^6\)It is important to note, however, that Ballard decided to exclude sites from the New Guinea
Highlands.

\(^7\)Ballard’s rationale for distinguishing IS sites and, on occasion, excluding them from analyses, was
that the high numbers of individual sites in these intensively researched and documented clusters of
sites (such as the sites of Sialum and Sogeri areas) tended to skew the results of analyses.
distribution of Austronesian-speaking communities provides a terminus post quem of c.4000 BP (now considered to be 3500-3300 BP) for the painted art. Third, that people deliberately selected inaccessible locations to produce painted rock-art (1992a: 96). And lastly, that the cohesiveness of the motif range suggests that a tradition of painted art developed in tandem with the migration of Austronesians. In relation to this last point, however, Ballard argued that

[i]f the symbolic tradition represented at these sites formed part of the cultural baggage accompanying the initial spread of AN-speakers, we might expect some divergence of motifs and locational characteristics, particularly over the time lapse between 4000 BP and the date of about 2000 BP for initial AN settlement of the South Papuan Coast (Allen 1984; 430). (Ballard 1992a: 98)

The regional uniformity among painted motifs suggested to Ballard that the tradition may have begun after the initial spread of Austronesians into the region – perhaps closer to 2000 BP than to 4000 BP – and that it moved via existing networks of communication between Austronesian-speaking enclaves. In further support of the idea that the tradition coincides with a later Austronesian movement, Ballard noted the presence of formal similarities between rock-art motifs and those found on bronze artefacts dating after 2100 BP. Red designs on pottery from Eriama rock-shelter (Papuan south-coast) dated to post-1830±230 BP were also thought to bear a close resemblance to red painted rock-art at the same site and elsewhere in the western Pacific (1992a: 98).

3.3 Discussion

Regional studies of western Pacific rock-art have primarily used non-motif variables to invoke the idea of two distinct spheres of rock-art, one defined by engravings and the other by paintings:

1. A widespread engraving style (hereafter ‘AES’) has been linked to Austronesian-speaking areas, and is described as being associated with boulders located in open locations, often within or beside water courses (Specht 1979). The motif range affiliated with the AES is said to consist of curvilinear geometric forms, including spirals, concentric circles, facelike forms, and various other concentric forms (Specht 1979: 74). Several painting assemblages bearing similar motifs are also regarded as possibly associated with the AES.

2. The ‘Austronesian painting tradition’ (hereafter ‘APT’) has been proposed as a collective description for a repertoire of painted sites found in Austronesian-speaking areas and associated with inaccessible coastal cliff locations often visible from the sea (Ballard 1992a). Red pigment has been noted as the primary colour represented at these
sites, and inter-site homogeneity among the motifs has been observed (but not described) (Ballard 1992a). The APT is thought to have emerged in conjunction with a late movement of Austronesian speakers around 2000 BP from east to west along the south coast of Papua, although it may subsequently have influenced painting styles in non-Austronesian-speaking areas.

One of the problems that has emerged as a result of this dichotomised view of western Pacific rock-art is that it is unclear how traditions or styles of painting and engraving articulate with one another through time and space. This problem was exacerbated by Ballard’s (1992a) decision not to look at engravings, and because neither Specht (1979) nor Rosenfeld (1988) identified Ballard’s region-wide tradition of paintings – instead noting the occurrence of more localised painting styles. This leaves us with a somewhat confused picture. For instance, Hugo found correlations between engravings and paintings, particularly in coastal areas, on the basis of a shared range of motifs. Specht and Rosenfeld found differences in that painted assemblages are generally found to the west of the Vitiaz Strait, while engravings are more an Island Melanesian phenomenon. Ballard and Specht, on the other hand, linked both painted and engraved assemblages to Austronesian-speaking areas. How might these seemingly disparate lines of argument be evaluated? Is painted art—which occurs mainly in the west according to Specht and Rosenfeld—replaced by engraved rock-art in conjunction with a movement of Austronesian speakers? Do the differences between painted and engraved pictures represent traces of two separate movements of Austronesian speakers? Or might they be indicative of social or taphonomic variation?

In the introductory chapter to this thesis it was pointed out that one of the major deficiencies of past research into western Pacific research is the lack of a systematic analysis of motifs. The AES is founded not only on a systematic study of locational variables but also on an impressionistic link between motifs. The APT is also constructed on the basis of a systematic study of locational variables and a ‘hunch’ that it is also constrained by a cohesive set of motifs. At the conclusion to this chapter a series of methods for systematically examining motif variability within the AES and APT is offered that might allow us to establish whether these are in fact discrete entities, and to determine whether the similarities and differences between them have to do with spatial, temporal, or other factors.

### 3.4 Pacific rock-art: a description

In the following section region-by-region descriptions of the rock-art of the Pacific islands are presented. The aim is to produce a comprehensive picture of spatial and temporal trends in the rock-art of the region prior to conducting more detailed statistical analyses in Chapter
4. Many of the rock-art sites mentioned in this section are located on distribution maps, particularly those included in the statistical analyses presented in Chapter 4 (see Figures 3.7-3.11). Each of the site numbers on Figures 3.7-3.11 correspond with the site names listed in Figure 4.1. Most of the Highland and lowland sites of Papua New Guinea have not been mapped.

In this section I treat the AES and the APT as if they are real entities and describe the rock-art of the region in relation to them. Then in later chapters, when the results of the statistical analyses have been determined, I re-evaluate whether the AES and the APT remain appropriate frameworks for accounting for variation observed in rock-art across the region.

3.5 Eastern Indonesia, East Timor and West Papua/Irian Jaya

Rock-art sites share a range of common characteristics in Eastern Indonesia, East Timor and West Papua (formerly Dutch New Guinea), most notably those defined by the APT, which include being coastally located in inaccessible 'cliffed' locations and situated within currently Austronesian-speaking areas. The majority of sites in these regions appear to be painted, although further systematic survey may alter this perception. The region paid most attention in the literature is the southern coast of Teluk Berau, more commonly known as the MacCluer Gulf. However, numerous sites in other parts of West Papua, the Moluccas (Seram and Kei), East Timor, Sulawesi and Borneo have also been described.

Rather than examine the rock-art of each of the above regions in detail, I limit my discussion here to an overview of the painting sites of the MacCluer Gulf. The MacCluer Gulf represents one of the few areas in the western Pacific for which a relative chronology for rock-art has been proposed, and is also the region which Ballard (1992a: 98) suggests represents 'the clearest expression' of the APT. The MacCluer Gulf therefore presents itself a potential point of departure for the development of a temporal framework for the painted rock-art of the western Pacific as a whole.

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8Irian Jaya is now officially referred to as 'Papua'. However, so as not to confuse this province with the former colonial territory of Papua in neighbouring Papua New Guinea, I refer to it here as 'West Papua'.
9e.g. Léon 1880; Röder 1938a, 1938b, 1939, 1956, 1959; Galis 1964; Singer and Ballard 1988; Chaloupka 1994; Arifin 1998.
Most of the MacCluer Gulf sites occur in shelters or on cliff faces overlooking the sea along a 30km stretch of the Gulf’s southern coast and string of islets between Koka and Goras. These sites were first studied in detail by Josef Röder (1956, 1959), a member of a 1937-38 expedition to the Moluccas and (then) Dutch New Guinea sponsored by the Frobenius Institute. Röder recorded a total of 40 sites in the region, although since then at least another 17 have been discovered (Arifin 1998). The art is mostly painted in red and is generally found at inaccessible locations up to 30m above the water level. Many of the decorated rock shelters contain platform burials which Röder (1956: 388) suggests are contemporaneous with the most recent black rock-art of the region (see below).

Röder’s five-phase chronology for the MacCluer Gulf assemblages is based on patterns of superposition of various ‘styles’ of painted art. The four earliest phases consist of red painted rock-art and the latest of black and white. Röder suggests a continuation from the beginning to the end of the sequence based on the transmission of motif forms from one style to the next.

Tabulinetin style: This earliest style consists largely of silhouette forms infilled with red, including images resembling artefacts, fish identifiable to species level, many hand and foot stencils, a few anthropomorphs (these are more prominent in later styles), and the occasional ‘human-lizard’ form (Plate 1). Images tend to be densely distributed such that it is not uncommon to find an entire surface completely covered in red designs. According to Röder (1956: 394), the hand stencils of the Tabulinetin style provide a background canvas for some of the later linear art. Where stencils do not occur, it is common to find areas of limestone sprayed with red paint upon which other art is painted. Stencils of axes – thought to be Dong-son bronze axes – would place the beginning of the Tabulinetin style, and indeed the entire MacCluer Gulf rock-art sequence, at no earlier than c. 2200-2100 BP (Spriggs 1989; Bellwood 1997).

Manga style: This style departs from the Tabulinetin style in several distinct ways. Tabulinetin silhouette figures and fish motifs are largely superseded in the Manga style by carefully executed and elaborate red outline figures, including a diverse range of human-lizard forms. Silhouettes, including fish and anthropomorphs, are often dissected by a median line and/or infilled with chevrons. Particularly striking is the wide-range of non-figurative forms, including elaborate variations of the circle, a diverse range of symmetrical designs, and various interlocking spirals and scrolls. The solidly filled panels which denote the Tabulinetin style are no longer observed. Röder (1956: 400) compares the Manga material to decorative motifs assigned to the ‘Indonesian Bronze Age’. 
The following two red styles, *Ota I* and *Arguni*, are geographically restricted relative to the two earlier styles but are described as variants of the Manga style. Berger-Kirchner (1961) describes the *Ota I* and *Arguni* motifs as being 'coarser, more ungainly and ... larger' than the Manga.

The *Black (or Ota II)* style is described as linear, sketchy in appearance, and occasionally consisting of broad-stroked applications of pigment (Rosenfeld 1988). It is also described as consisting of 'drawings', as opposed to the 'paintings' which define earlier styles. It differs from the Manga style in terms of colour and in that the artistic approach is 'freer' and 'less standardised' (Rosenfeld 1988). However, there are some continuities from earlier styles in content, with the presence of human-lizard forms, certain non-figurative motifs and simple ship motifs. The black painted ships, which occur in considerable numbers, often consist of high curving prows and standing elements said to resemble Dong-son 'ship-of-the-dead' motifs. These are thought to be connected with the boat coffins (soul boats) found in various shelters containing rock-art.

White figures have also been noted in the MacCluer Gulf assemblages, but they are restricted in their occurrence and have not been assigned a style classification. They tend to be sketchy in appearance, rendered in thick bold lines or silhouettes (Chaloupka 1994). Röder (1956: 393) suggests that, because they are only slightly weathered in appearance, they probably 'represent very recent artistic manifestations'.

Despite the stylistic variation observed in the MacCluer art, Röder (1939: 177) suggests that a uniformity in subject matter does exist. One figure which Röder proposes cross-cuts each of these styles, and which must therefore be of considerable antiquity, is what local people describe as *Matutuo* – a spirit figure with a human-lizard form. Similar figures are found at painted sites throughout West Papua and mainland New Guinea, including the Yagondo figures of Chimbu Province and other highland, lowland, and coastal regions (see below).

The MacCluer Gulf rock-art corpus – which manifests all of the features of the APT – provides a critical comparative basis for examining the rock-art of the rest of the western Pacific. Possible representations of Dong-son axes in the early Tabulinten style would place the beginning of the MacCluer Gulf sequence at around 2200-2100 BP, a date which corresponds with the proposed emergence of the widespread APT (Ballard 1992a). One of the aims of the next few sections is to evaluate whether the rock-art of the MacCluer Gulf and the adjacent regions underwent comparable transformations.
3.6 Mainland Papua New Guinea

In this section the focus is on the rock-art of mainland Papua New Guinea,\(^\text{11}\) with summaries of the distributions of sites in three geographic zones: the Highlands, the Lowlands interior, and coastal. The division between Papua New Guinea and West Papua (the western extent of my sample area) is not conceived of as a cultural one. Rather, it represents a convenient arbitrary boundary to bracket the area under review. Rock-art in Papua New Guinea is very common and provides a large enough sample to address all of the major issues raised in this thesis without having to describe all of the rock-art west of this region. One issue which requires considerable attention is the relationship of the APT and the AES to the rock-art assemblages of non-Austronesian (NAN) speaking areas. Are the components of the APT and AES found exclusively in Austronesian-speaking areas, or do they overlap with non-Austronesian-speaking areas? And how might such overlap be accounted for?

3.7 Papua New Guinea (PNG) Highlands

Almost all of the rock-art of the PNG Highlands is found in rock shelters and consists of either red or black painted motifs, although some bichrome and polychrome forms have also been noted. Engraved motifs are known but occur much less frequently than paintings. Certain motifs are replicated at different sites throughout the region, such as Yagondo figures (anthropomorphs with either exaggerated genitalia or tails; see below); human-lizard forms; leaf-shaped motifs; variants of the circle; crosses; enveloped crosses; chains of triangles; chevrons, and rectangular grids. Such motifs are not restricted to a particular site type or rock-art technique.

3.7.1 Simbu Province and Eastern Highlands Province

Wilde’s (1974a, 1975a, 1978a) study of Simbu and Eastern Highlands rock-art has revealed that, while some internal variation exists, a broad and cohesive style defines the region. The majority of rock-art consists of black infilled geometric drawings of linear structure, which are different from the rock-art of surrounding provinces where a greater range of red painted art is found. Circular designs are common, most being elaborated with dividing lines, spokes, rays, dotted lines and/or infill. Triangles, lozenges and chevrons also occur, with chevrons in a rectangular or leaf-shaped outline being particularly prevalent. Other designs are more localised, such as the infilled shield-shaped motifs found only in Simbu Province.

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\(^{11}\)Throughout this thesis ‘mainland Papua New Guinea (PNG)’ is taken to mean only the eastern half of New Guinea. Likewise, the ‘Papua New Guinea (PNG) Highlands’ define the highland regions of the eastern half of New Guinea.
Simbu rock-art includes two different kinds of anthropomorphs. One of these – the *Yagondo* – is a silhouette figure with a square or triangular shaped head. Its legs are characteristically bent, its arms point either up or down, and it often features a tail-like appendage (Plate 2). The other, *Gerigl Ambu*, is more elaborate and varied than the *Yagondo*. Its body is triangular, the arms (if they are depicted) are short and raised upwards, the head is small and either round or triangular, and the legs are bent. The figures are embellished with elaborate infill patterns of chevrons, triangles and other designs. The entire form is surrounded by multiple short ‘spiky’ lines.

The ages of the charcoal drawings at Ak Kagamugl and other Simbu sites remain unknown, although local views are that the ochre paintings in the Simbu region were executed both before and after the arrival of Europeans in the 1930s (cited in Wilde 1974a: 164).

A number of caves have been reported in the Sinofi and Henganofi areas of the Eastern Highlands (Wilde 1974b, 1978a). These contain painted or drawn anthropomorphs (some resembling the *Yagondo* figures of Simbu Province), zoomorphs, crosses (including enveloped crosses), leaf-shapes, linear designs, ‘chevrons, circles (some concentric), circles with “sun-rays”, chains of filled-in inverted and upright triangles’ (Wilde 1974b: 250-251). Shield shapes are also found in this region but they are more elaborate than those in Simbu Province, with rectangular or hooked appendages and scrolls surrounding the outside of the main shield shape (Wilde 1978a). Pigments include red, yellow, white, pink and black. All of the rock-art was produced beyond the living memory of Wilde’s informants (Wilde 1974b: 251).

Also in the Eastern Highlands are a series of decorated granite outcrops located on the eastern side of the Ramu River in the Arona Valley (Giddings 1973). On one of these outcrops, known as Orna’maiya, are several geometric motifs painted in red. They are quite high up and can only be accessed by a ladder, a characteristic reminiscent of the coastal sites of the MacCluer Gulf and adjacent regions. Within the same complex is the engraved site of Oya’parari, a boulder displaying some 110 longitudinal grooves. On another outcrop – Oni Paiya’i – is a set of 11 very worn, shallow, engravings consisting of oval and near-circular forms partially bisected by a vertical line. The Kundana say that these motifs represent female genitalia, an interpretation matching that assigned to similar forms reported from the Jimi/Wahgi valley sites (see below).

White and White (1964) report five rock-art sites in the area around Kainantu in the Eastern Highlands. Four of these, Bari’ira, Batari, Isna and Asara, are located to the south of Obura.
The fifth site, Aibura, lies between Obura and Kainantu. Apart from Asara, all of the art occurs on limestone outcrops. At Aibura, the rock-art consists of numerous linear charcoal drawings as well as a unique set of motifs composed of outlined dots of white clay, including human-lizard motifs. At the four sites south of Obura the rock-art consists mainly of red, and occasionally yellow, pigment, on sheltered overhangs or on exposed vertical surfaces. Red painted art is relatively rare in the Eastern Highlands, its occurrence here in exposed locations being especially reminiscent of the cliff-art of the MacCluer Gulf and adjacent coastal regions. Some of the rock-art, such as that at Batari, cannot be reached without assistance, being several metres above the ground (White 1967b). The most common motif at these sites is the hand, in the form of stencils, prints and outlines. Hand stencils also feature prominently in the early Tabulinten rock-art of the MacCluer Gulf. Human-lizard forms and several non-figurative motifs (including enveloped crosses) are also present.

Other painting sites in the Eastern Highlands include the Kafiavana, Patadzavana, and Niobe (now Nombe) rock shelters, all located in the Chauve area. Kafiavana displays some of the more spectacular rock-art of these sites, including bichrome circular and ‘occuli’ motifs, ‘abstract human figures’ and ‘diagonally rectangular’ forms (Wilde 1976c). The motifs stretch along 8.6m of the rear wall of a limestone overhang and range from 0.8 to 3.2m above present ground level (White 1967a: 379). The most common motif at the site is a ‘spoked’ white circle with internal divisions of multiple colours. The pigment colours found at the site include black, white, one or two shades of red, yellow-brown and a bluish-grey. The age of the rock-art is unknown. However, White (1967a) offers several lines of evidence to suggest that they are pre-European but probably no older that a few hundred years. Firstly, his informants can identify the rock-art; second, his informants indicated that the rock-art was produced by their forefathers (no more than fourth generation ancestors); third, the paintings are located in a highly exposed tropical environment and are therefore unlikely to survive indefinitely; and fourth, there are no paintings below the current ground level. With regards to this latter point, however, White (1967a: 389) concedes that one or two of the paintings are more than 3m above the floor level and an artificial support would have been needed to produce them. ‘All paintings might therefore have been done in this way and need not relate to the present ground surface at all’ (1967a: 389). The rock-art at Patadzavana is described as ‘crudely done’ in red or black paint, with some of the designs bearing similarities with those found at Kafiavana (White 1967a: 390). The rock-art at Nombe is also similar to that at Kafiavana with segmented and rayed circles featuring among the more prevalent motifs. Other forms include ovals, crosses and a few ‘semi-representational’ figures (White 1967a: 391). Four colours have been used in the production of the images (black, yellow, light and dark red) which are either monochrome or bichrome.
3.7.2 Western Highlands Province

This province includes the rock-art of the Jimi and Wahgi river valleys. Recorded in some detail by various researchers (Aufenanger 1958; Bulmer 1960; Christensen 1975; Gorecki and Dallas 1989), it is clearly different to the Eastern Highland and Simbu rock-art in terms of colour, technique, and design. Gorecki and Dallas (1989) recorded 12 sites in this region. Most consist of red ochre paintings, some of which are particularly difficult to access (Gorecki and Dallas 1989: 236; Aufenanger 1958: 623). The painted rock-art of this region is diverse in content but three motifs are reported to be more pervasive than others:

1. the human-lizard form;
2. short spirals creating heart-shaped motifs; and
3. a pointed oval surrounded by rays (locally interpreted as a kina shell board used during certain ceremonial events).

Two of the Jimi/Wahgi sites – Tembinde and Nimnimbil – are reported to contain engraved motifs, including ‘pointed’ ovals with central lines interpreted as vulvae. These forms are comparable to those found at Oni Paiya’i in the Arona valley (Eastern Highlands) which have been accorded the same interpretation. A number of the Jimi/Wahgi engravings have been recently infilled with black charcoal, and one shows traces of red ochre.

Some of the Jimi/Wahgi paintings resemble both Sepik wood carvings as well as particular engraved rock-art motifs observed in Island Melanesia. Scroll and heart shape motifs recorded at the Tembinde cliff site, for example, resemble engravings seen in New Britain and New Ireland. Scroll motifs are pervasive throughout the western Pacific, in the Manga style paintings of the MacCluer Gulf, here in the painted and engraved assemblages of the Jimi/Wahgi river valleys, and in the engraved assemblages of Milne Bay, New Britain and New Ireland (Plate 3). One of the important points that the distribution of these motifs raises is that certain motifs are represented in both painted and engraved assemblages across the region, while others, such as the engraved ‘vulvae’, are represented in one medium only.

Two more sites in the Wahgi valley, Western Highlands Province, were recorded by John Burton and Chris Ballard in 1989 (Ballard pers. comm. 2001) Kora 1 and Kora 2 are both limestone shelters containing red paintings. The most common image present is a lizard-like form similar to the ‘human-lizards’ recorded by Gorecki and Dallas in the adjacent Jimi valley. A zigzag, concentric circle and a diamond bisected by a single line are among the non-figurative motifs present at these sites.
No attempt has been made to date the rock-art of the Western Highlands although Bulmer (1960) reports that red pigment is superimposed by black pigment at one site. This chronological sequence emerges as a regional pattern encompassing not only coastal rock-art sites but also sites within the lowland and highland regions of New Guinea.

### 3.7.3 Southern Highlands Province

The rock-art of the Southern Highlands is diverse, and in some areas quite different from rock-art found elsewhere in Papua New Guinea. For instance two bichrome (red and black) paintings at Pirua cave (south of Poroma) are described by Bourke (1973: 65) as being unlike those already known from Simbu, Kainantu, Port Moresby, Kitava Island (Trobriands), and Jafi and Jegriffi (West Papua). One of these paintings resembles a face, a motif which is rarely represented in the painted rock-art of the western Pacific.

A unique set of rock-art sites has also been reported around the Tari region. Two sites within 30km of each other contain examples of digital fluting (Ballard 1992b; 1995: Appendix C10, p. 55); a rock-art form which is found extensively in southern Australia. One of these sites, Kalate Egeanda, is a narrow cave about 400m long which contains a panel of linear grooves (or finger fluting) on a 1m long section of soft calcite (mondmilch). According to Ballard (1992b: 120), superimposition in the central part of this panel and differences in the degree of weathering on some of the grooves suggests that not all of the rock-art was produced at the same time. Ballard (1992b: 121) postulates that if the fluting of southern Australia was produced during the late Pleistocene when New Guinea and Australia were joined as Sahul, perhaps, then, we are looking at a single tradition which spanned the original Sahul continent.

Other rock-art sites in the Southern Highlands do bear similarities to sites elsewhere in Papua New Guinea and eastern Indonesia, such as those around the southeastern end of Lake Kutubu (Williams 1940/2; Haberle 1989) and several sites in the Strickland River area (Hook 1963; White 1969; Ballard 1995). The rock-art at Lake Kutubu resembles the rock-art of both the MacCluer Gulf in West Papua and the Buang Valley in Morobe Province (see below). The Lake Kutubu motifs are red and occur in association with lake-side cliff-burials. Among the images are a range of non-figurative rectilinear motifs and human-lizard forms (Plate 4). The rock-art of the Strickland River is both red and yellow painted and occurs in limestone shelters, overhangs and on boulders. The paintings, which are similar to those found in the nearby Telefomin Valley (see below), consist of hand-prints, ‘men in
squatting position’, ‘arrows’ (Hook 1963), simple stick figures with arms and legs at 90 degrees to the body, chevrons, diamonds and enveloped crosses (White 1969).

Two sites at Mt. Bosavi – Melokolosen and Sorosoro – also display engraved motifs which are similar to those elsewhere in Papua New Guinea (Mandui 1998). A number of the engravings at these two sites are described as depictions of female genitalia, an interpretation offered for similar engravings in the Eastern and Western Highlands provinces and the Sogeri Area.

### 3.7.4 Situating the rock-art of the PNG Highlands within a regional context

This piecemeal account of the rock-art of the Highlands of PNG draws on a disparate range of sources which have never before been collated within a regional summary. In spite of this, it is becoming increasingly clear that Highlands rock-art needs to be built into the theoretical frameworks underpinning the APT and AES. Throughout this section I have identified characteristics at several Highlands rock-art sites (e.g. Lake Kutubu) which display most of the characteristics defining the APT. These similarities are manifest in terms of the use of red pigment, the occurrence of certain motifs commonly found at APT sites, and the inaccessibility of the art. A number of these sites are also found in close proximity to human remains.

Despite the fact that there is very little engraved rock-art in the New Guinea Highlands, there appear to be certain motif consistencies across the region. The most striking of these are the leaf-shaped or ovular motifs with central lines, commonly described as depictions of female genitalia. These motifs have been found in the Eastern, Western and Southern Highlands and, as described below, in Central Province. In the absence of clear illustrations of these motifs (the Jimi/Wahgi examples being an exception), it is difficult to say whether they are connected with the AES. Apart from these particular motifs, none of the other criteria (or motifs) which define the AES have been identified in the engraved rock-art of the Highlands of New Guinea. Several forms which have been attributed to the AES (e.g. scissor and scroll-shaped motifs) do, however, occur at some of the painted rock-art sites of the Highlands (e.g. the Jimi/Wahgi valley). Thus, as for the APT, in defining at least the spatial parameters of the AES it will be important to include parts of the non-Austronesian (NAN) speaking areas of the New Guinea Highlands.

The geographic associations between current Austronesian-speaking regions and both the APT and AES appear to be less definitive than formerly thought. While the rock-art sites of the non-Austronesian Highlands of Papua New Guinea display considerable thematic and
stylistic diversity, there is sufficient evidence to suggest that certain components of the APT and AES find their way into the heart of New Guinea. The implications of these findings will be discussed throughout this thesis.

3.8 Papua New Guinea lowlands interior

The majority of sites listed in this section are located in the 'lowlands interior' of Papua New Guinea, which is a useful geographical category for differentiating those rock-art complexes located inland from the coast but not in the Highlands. Several of the sites in this category are not strictly in the 'lowlands', e.g. the Telefomin-Bufilmin Valley sites of West Sepik Province, but are included here as the strongest artistic influences in this Mountain Ok region of the Sepik Valley (Craig 1995).

3.8.1 Sepik provinces

The rock-art of the Sepik consists of both engraved and painted art. Here, as elsewhere, red rock-art predominates at 'cliffed' sites and black pigment at cave sites. Among the painted motifs are a number of black or white lizards and red diagonally set and enveloped crosses. Enveloped crosses, like scrolls, are represented in both engraved and painted assemblages from Eastern Indonesia to Island Melanesia.

Bragge (1976) reports a small number of charcoal drawings and scratches in one of the six Piri caves, in West Sepik Province. There are said to be a number of engravings at this site which are arranged in an 'untidy unrelated mess'. The charcoal drawings include lizards, and spiral and scissor (scroll) motifs which bear similarities to the painted rock-art of the Jimi/Wahgi valley and the engraved rock-art of Milne Bay (see below). They are also said to be very similar to rock-art at a complex of sites just across the West Papuan border (Galis 1957b; see sites 233-7 on Figure 3.7).

A number of sites are also found among the limestone outcrops of the Telefomin-Bufilmin Valley, in the highlands area of West Sepik Province (Wilde 1976a, 1976b, 1977). One of these, Selminum Tém, is a cave containing both painted and engraved rock-art, including an engraved bird on a limestone slab, some incised horizontal and parallel lines, and some faded white paintings. One of the white paintings resembles an anthropomorph and is located c. 4 m above the ground surface.

Kenengkeneng Tém, a limestone overhang 18 km west of Telefomin, contains both burials and rock-art. The burials are placed on ledges and wedged in solution features. The painted rock-art is mainly red, and motifs include diamond shapes and a diagonally set cross. Tém
Luu Tém, a cave in the same area, contains both black charcoal drawings and a ‘red clay’ painting. The charcoal designs include circles and concentric circles, lizards, meandering lines, rectangular grid patterns, crosses and an anthropomorph. The red clay design is a ‘diagonally set red cross’ (Wilde 1975b: 119). The rock-art motifs at these sites are similar to the geographically close Strickland River material.

To the north of Telefomin, on the eastern side of Table Mountain (Inikia de Bom), lies a sandstone cliff face some 120m long and 40-50m high. Rock-art is located beneath a protective overhang situated approximately 15-20m above the cliff base, accessible from a ledge. Among the motifs are upright and diagonal cross motifs, enveloped crosses, circles, spirals, concentric circles, open and filled crescents, negative and positive ‘cassowary tracks’, anthropomorphic figures, triangular and rhombic motifs, and other geometric and abstract designs. The art is red, yellow, orange, brown and white, and the pigments are said to be composed of clay materials from local creek beds (Wilde 1978b: 116). There is a complete absence of black paintings in this area, and no local knowledge of the art. The site itself is believed to belong to the ancestors.

A cave site located in a limestone cliff near Seraba (East Sepik Province) has also been described in unpublished field documents (Jones 1987), and is said to contain hand stencils, circles with central crosses (polychrome with red, yellow and black), enveloped crosses, bat designs, lizard-like forms and other motifs which are comparable to images observed in both the highland and coastal regions of Papua New Guinea.

Some of the most spectacular rock-art of East Sepik Province, located in the Upper Arafundi and Upper Karawari River areas, has been subjected to preliminary recording by Gorecki and Jones (1987a and 1987b). This study involved an examination of sacred material and has not yet been published.

3.8.2 Morobe Province

Much of the known rock-art of Morobe Province is found in two dense clusters of sites in the Buang Valley and at Sialum on the coast of the Huon Pensinsula (Figure 3.8). The Buang Valley sites are located on the cliff faces among the ossuaries of the Buang people (Girard 1957; Gallasch 1973, 1974b; Zimmerman 1978). Almost all of the rock-art consists of painted anthropomorphs, many of which are said to depict the individuals whose remains are deposited in the cliff-side shelters (Plate 5). The bodies of these anthropomorphs are spindle-shaped, the legs are linear and bent, and the arms are raised. The head generally consists of an arc with rays, with some figures bearing a ‘feather headdress’. The facial
features are often limited to the depiction of two arcs, said to be eyebrows. An appendage between the legs is described as the tassles worn from a waist-belt during dancing events. The figures look similar in form to the human-lizard shapes found elsewhere in the painted rock-art of New Guinea and eastern Indonesia, though their decoration is considerably elaborated.

Whether the paintings are functionally associated with the ossuaries is unknown. Vial (1936) and McWilliam (1936), who both collected information from the Mapos people regarding the burial cliffs, report that each village or group of villages has its own burial place, usually located on the ledges of a limestone cliff. The ledges are difficult to climb and can only be reached with the aid of a rope or scaffolding. Exactly where a person’s physical remains were placed on a cliff ledge depended on the individual’s status in life. Women and children were positioned at the base of cliffs; men who had not achieved any significant status were located on higher ledges; men of high status within the community were placed higher still. Future studies might consider examining the relationship between particular rock-art motifs and the height of cliff-burials, not just in the Buang Valley but elsewhere in New Guinea and eastern Indonesia.

A socio-cultural association between rock-art and burials across the region has yet to be demonstrated, but concise documentation of the motifs featured close to burial remains would be one way of determining whether there is in fact a region-wide tradition of mortuary art associated with cliff burials. Anthropomorphic images, such as the ones here in the Buang, and in the MacCluer Gulf, Lake Kutubu and Sialum (see below), are particularly worthy of further analysis. The Buang Valley sites are unique in the sense that they are located within an area currently inhabited by a small enclave of Austronesian-speakers who migrated inland from the adjacent coast. This is one of the more convincing examples of a strong association between Austronesian settlement and a particular tradition of painted art that involves the reproduction of a unified symbolic system associated with ‘cliffed locations’, red pigment and funerary remains.

Another major assemblage of painted sites in the Morobe district occurs in the Sialum region on the Kwangam River (Kamminga 1972; Specht 1973). Like the Buang Valley sites, human skeletal material is found in close proximity to the rock-art at some sites. Only one engraving (a ‘scratching’) was found among the 20 sites recorded (Kamminga 1972). Most of the paintings consist of red painted linear motifs and hand stencils, although a few white, black, green, and blue coloured images have also been noted. All of the sites consist of either caves or shelters within uplifted coral terraces. Few examples of superimposition were
reported, offering little insight into the relative age of the rock-art. Motifs consist of a variety of figurative and non-figurative forms, including circular motifs, crosses (including an enveloped variety), triangular and diamond-shaped figures, arcs, lines, leaf shapes, herringbone forms, scrolls and other indefinable marks. Figurative motifs include stick figures, and forms resembling a centipede, a bird, and several lizards. Intersite similarities between the rock-art of Sialum have been noted.

The linguistic history of the Huon Gulf region is particularly turbulent, having probably experienced a migration of Austronesian-speakers at around or some time after 3000 BP (noted as a rough estimate) after which it was affected by contact with both Austronesian and non-Austronesian-speaking communities at different times (Ross 1988; Bradshaw 2001: 285). Given that the Sialum sites manifest each of the criteria defining the APT, the possible historical presence of Austronesian-speaking communities in the vicinity of Sialum provides a measure of support for Ballard’s (1992a) argument that the tradition emerged and spread with the movement of (or contact with) Austronesian-speakers.

Also in Morobe Province is the Gao River site (Finschhafen region) which has received a mention in various accounts over the years (Pilhofer 1938; Bodrogi 1961: 132; Proske 1964; Pretty 1966: 49; Jim Specht also visited and reported on the site in 1969). The site consists of several engravings on a volcanic boulder balanced on the side of a river bed. Most of the motifs consist of incised non-figurative images, although an outlined hand and some possible depictions of axes are also present. The engravings contrast markedly with the curvilinear pecked and abraded rock-art characteristic of adjacent New Britain and sites elsewhere on the New Guinea mainland.

An engraving site has also been reported on Umboi, an island located in the Vitiaz Strait (Morobe Province), which appears to have several large face-like designs on it (Neuhauss 1914). Engraved faces are largely an Island Melanesian phenomenon which would seem to suggest that the rock-art at this site was manufactured within a cultural sphere which involved contact with communities in the Bismarck Archipelago and adjacent Island Melanesian regions. Ian Lilley (pers. comm. 2001) reports a painted rock shelter in the centre of the same island. The rock-art is said to be just above head-height and to consist of 'orange-red' images comprising non-figurative circles and lines. A considerable amount of 'modern black graffiti' is also said to be present at the site, including an image resembling a 'guitar'.
3.8.3 Central Province

Both paintings and engravings have been recorded in the Sogeri area in the Port Moresby hinterland (Figure 3.8). It is common to find both techniques at a single site, and often combined within the same motif. Some of the more common engravings in the shelter sites across the region include deeply incised ovals with dividing lines, similar to those described as vulvae at the Jimi/Wahgi river valley sites and others in the Eastern and Southern Highlands. According to Williams (1931), 'barred ovals' are found at the following five sites: Wagava, Isakerikeri, Serinumu, Wureva Yani, Wakuia Wai. Other forms include circles or ovals with an off-centred cupule, cupules, rayed stars, concentric arcs, human figures, a 'closed M' motif, and an open ended enveloped cross (Williams 1931; Strong 1923, 1924; Leask 1943; Kleckham 1966; White 1967b). A unique engraving site in Central Province is Lohomunidabu – a granite boulder decorated with anthropomorphic motifs comparable to those on Normanby Island in Milne Bay Province (see section 3.9 below) (Williams 1931).

Paintings are more common than engravings in this region and display considerably more inter-site variation. They are mostly monochromatic (red or black), although bichrome figures (red and white) have been reported at Wagara and Serinumu rock shelters. At a few sites a mass of one colour is used as a background for a series of linear drawings in another colour (e.g. Rouna and Wurera Yani, in the Laloki River Gorge). This production trait is reminiscent of the Tabulinetin style in the MacCluer Gulf where expanses of rock-surface are blocked-out with red ochre as a background for linear motifs (see section 3.5 above). Painted forms in the Sogeri area include 'sun symbols', concentric arcs, sinuous lines, chevrons enclosed in leaf or rectangular outlines, human-lizard and lizard forms – images which largely correspond with painted rock-art observed to the west, in the MacCluer Gulf and the Moluccas as well as other parts of Papua New Guinea. Paintings are occasionally located in inaccessible locations, occurring 6m high on a limestone block at one site (Strong 1923), and at another some 3m above the present floor level (Williams 1931: 127). Even though the painted rock-art of this region is located in a non-Austronesian-speaking area of Papua New Guinea, it expresses a number of the traits belonging to the APT. As in the Huon Gulf, the history of extensive inter-cultural contact and language shifting in this area may account for the presence of features of the APT.

The bichrome and polychrome rock-art of the Sogeri area bears a strong resemblance to motifs observed in and around the Eastern Highlands. According to Ballard (pers. comm 2001), these motifs are also represented on tapa cloth in the Highlands, a technology he
believes to have spread from coastal Austronesian-speaking areas into the New Guinea Highlands. The movement of tapa between the coast and Highland communities may account for the presence of aspects of the APT in the non-Austronesian-speaking areas of the Highlands. If this were indeed the case, then there is all the more reason to be wary of ascribing the ‘Austronesian painting tradition’ to rock-art alone. The interplay between various design media needs to be considered if the APT is to be engaged in historical reconstructions of social interaction between coastal and highland communities.

As for most other rock-art regions of Papua New Guinea, few clues as to the age of the rock-art of the Sogeri/Port Moresby region are available. At Rouna, red is invariably superimposed by other colours (Leask 1943), whereas at nearby Wurera Yani, red has been found superimposing white images. At Serinum, it has been suggested that two faded yellow figures might be older than other images at the site (Williams 1931). At Wakuia Wai, black drawings superimpose certain red paintings (Williams 1931: 127). The engravings at Lohomunidabu are said to be ‘obviously ancient’ because ‘[t]hey are smooth and weather-worn and of the same colour as the surface of the rock (Williams 1931: 130).’ No obvious pattern of superimposition or sequence emerges from these limited observations.

3.9 Papua New Guinea coast

3.9.1 Milne Bay Province

Milne Bay Province has proportionately more engravings than any other region in Papua New Guinea (Figure 3.8). A number of standing stones adorned with engravings are located in the Goodenough Bay region at the villages of Boianai and Wedau, (Etheridge 1908; Newton 1914; Williams 1931; Egloff 1970). The motifs at Boianai – often decorating stones in a circular arrangement – are referred to as giripipina, a Boniki word used to refer to female tattoos (Egloff 1970: 152). Forms at both Boianai and Wedau are generally curvilinear, and include circles, concentric circles, circles with rays and spokes, rosettes, concentric arcs, spirals, linked spirals, interlocking S-shaped double spirals, enveloped crosses and stylised faces (Plate 6). Rosenfeld (1988: 129) writes that a crescent shape with a spiral at either end, found at Wedau, is a pervasive motif in the contemporary art of the Admiralties, northern New Guinea, the Massim, and the Solomons. Reference to its iconic association with a ship-of-the-dead motif has been made by Badner (1972). Egloff (1970: 154) has observed parallels between the curvilinear rock-art (including enveloped crosses) of Goodenough Bay and that of the Sepik River (Wirz 1959), New Caledonia and New Hanover. Similarities between aspects of the Manga phase of the MacCluer Gulf and the Goodenough Bay engraving material are also notable.
On Normanby Island (d'Entrecasteaux Islands) engravings occur on both standing stones (often in circular arrangements) and natural features. At the site of Bisiai, several rocks and a cave are decorated. Images include anthropomorphs and concentric circles with attached spirals, rays and spokes, some of which have an internal cupule. At Sisiana, engravings occur on top of a rock locally referred to as *Bureva Pouia*. A large number of ‘pock-holes’ (probably cupules) are present, said to be caused by a local spirit cracking *mapwea* nuts on the rock. Unlike at Bisiai, where there is a large figurative component, motifs at Sisiana tend to be non-figurative, including spirals, concentric circles, a spiral attached to a reverse coil, and an oval with a lateral cross-bar and a little ‘tail’ (Williams 1931:133). There is a strong correlation between the non-figurative motifs on Normanby and those at Boianai and Wedau at Goodenough Bay. The anthropomorphic figures at Bisiai on Normanby are unlike rock-art anywhere else in Milne Bay Province, their nearest parallels being the anthropomorphs at Lohumunidabu in Central Province (Egloff 1970). Several engraved motifs with similar scroll-like forms have also been reported at the site of Kwaianewanewala, on Fergusson Island (Young 1987: 36).

The age of the engravings in Milne Bay Province is not known, but decorated shell found in a mound deposit at Collingwood Bay resembling the Goodenough Bay rock-art (including an S-shaped double spiral, and a stylized face resembling the Type1 faces identified by Spriggs 1990b) has been dated to between 500-1000 BP (Egloff 1979). Pottery with designs similar to the rock-engravings of Milne Bay has been noted elsewhere in southeastern New Guinea, including Mailu, Woodlark, and Paneati (Louisiade Archipelago) (Tindale and Bartlett 1937; Solheim 1964; Golson 1972a).

The Milne Bay pottery and rock- engraving motifs, which share various allomorphs of the curvilinear scroll, are said to be absent among the motif range characterising decorated pottery in Island Melanesia (Golson 1972a: 582), although the pedestaled ‘Ceramic Group P’ bowls identified by Egloff are thought to be of ‘striking Lapita affinity’ (Kirch 2000: 122). On the basis of motif analogues, Golson (1972a) has argued for possible connections between the art of Milne Bay (pottery, rock-engravings, incised shells), the Sa-huynh-Kalanay pottery tradition of Southeast Asia, and Dong-son bronzes – all of which bear comparable curvilinear scroll/spiral motifs. On the basis of these associations, Golson (1972a: 582) suggests that the Milne Bay pottery with curvilinear scrolls may have made an appearance ‘...later than the movements that effected the colonisation of Oceania.’
Motif correlations between the pottery, shell and rock-art of Milne Bay, and ‘Metal Age’ items certainly accords with the idea of a late colonisation of the Papuan coast sometime around 2100 BP. Lilley (1999: 31) has recently argued that there may have been a chain of connection after this time extending from ‘... the southeastern tip of Papua through the Vitiaz Strait to the north New Guinea coast and beyond to the west.’ A close relationship between the languages of the North New Guinea and the Papuan Tip clusters also agrees with this model (Lilley 1999). This in turn would provide an explanation for the links between the scroll/spiral art of Goodenough Bay and the Sepik region. Further connections west, towards the Bird’s Head, would also account for the striking similarities between the Goodenough Bay and Sepik art and the Manga style rock-paintings of the MacCluer Gulf. The core of this argument is elaborated upon later in this thesis.

Painted sites are also present in Milne Bay Province: on Goodenough and Fergusson Islands (Jenness and Ballantyne 1920; Williams 1931), and on Kitava in the Trobriands (Ollier and Holdsworth 1970a, 1970b; Ollier et al 1970). The Goodenough Island site contains a number of black and white paintings which bear similarities to motifs (especially the human-lizard forms) observed in the rock-art of the Admiralty Islands (see below) and Morobe (the Sogeri district and the Buang Valley sites) (Egloff 1970). The rock-art of Koko-weo-weola shelter in the Ebididi district on Fergusson Island is said to display paintings in red, black and white, but no mention is made of the types of motifs present (Williams 1931: 130). Likewise, the rock-art of Mapamoiwia, a series of low coral cliffs on the southwestern corner of Fergusson, is described as possessing ‘three very small designs in red’, but little has been said of the images themselves (Williams 1931: 130).

Over 30 caves have been explored in the Trobriand Islands but only one, on Kitava, has been found to contain rock-art. Motifs include ‘mutilated hands’ (presumably stencils), ochre patches (including a V-shape), and black linear drawings. The ochre patches occupy a higher position than the other rock-art at the site, a feature which suggests connections with the APT (Ollier et al, 1970). The linear drawings are thought to have been produced from black mud collected from the cave floor, and applied with the finger. Among them are possible depictions of swordfish, sharks and turtles. Other black motifs resemble fish, some of which appear to have arrows or spears sticking into them. Possible paintings of an adze, a snake and a jellyfish are also present. A non-figurative engraving (spiral) located at the entrance to the main chamber has been compared to the local Wanigela pottery and ‘stone megaliths’ (Ollier et al: 27).
3.10 Selecting PNG sites for detailed motif analyses

Three of the rock-art regions described so far in this chapter are to be included in the statistical analyses which compare the rock-art of Island Melanesia (Chapter 4): Central Province, Milne Bay, and Morobe. In light of the volume of material available, I have decided to exclude sites from the Papua New Guinea Highlands, West Papua, Eastern Indonesia and East Timor, and to include sites from those regions which are closer to Vanuatu. Central Province, Milne Bay and Morobe are particularly appropriate for comparison because they possess very different rock-art which does not appear to be the product of mutual influences.

Central Province, and the Sogeri area in particular, contains engravings similar to those found in the Highlands of New Guinea (i.e. vulvae) and the Bismarck Archipelago. The analysis of these Central Province sites will thus be critical for indicating possible rock-art connections between the Highlands and lowlands of Papua New Guinea and Island Melanesia.12

Milne Bay contains both painted and engraved rock-art. The painted art, particularly that on Kitava, appears to be firmly entrenched within the APT. The engraved rock-art shares similarities with both AES engravings and several painted sites on the New Guinea mainland, including scrolls and enveloped crosses. The latter will enable some assessment of the relationship between painted and engraved sites in the western Pacific which share a similar motif range.

Despite its non-Austronesian status, the rock-art of Sialum (Morobe) could be described as a classic example of the APT. Its inclusion in a comparative analysis with the rock-art of Island Melanesia may therefore provide an important link with comparable site complexes to the west, such as the MacCluer Gulf, Lake Kutubu and the nearby Buang Valley.

3.11 Island Melanesia

In the following section I describe the rock-art of Island Melanesia, most of which is included in the statistical analyses presented in Chapter 4.13 Specht (1979) and Rosenfeld (1988) have both commented that engraving is the most prolific rock-art technique found in

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12 Even though Central Province contains both painted and engraved rock-art, the motif analyses of the following chapter mainly address the engraved rock-art from this region because it has been recorded in much more detail than the painted rock-art.
13 Sites excluded from the statistical analyses presented in the next chapter are those for which motif illustrations are unusable (due to inadequate recording) or otherwise unavailable.
Island Melanesia, and that similarities occur across the region in terms of both motif content and structure. The aim of this discussion is to tease out not just the similarities within the rock-art of this vast region, but also differences, both obvious and subtle.

3.11.1 New Britain

New Britain’s rock-art consists of both painted and engraved rock-art, with the two media occasionally occurring at the same site (Figure 3.8). The painted art has many of the characteristics already described for the rock-art of Papua New Guinea and regions to the west which fall under the rubric of the APT. It is primarily red and often occurs on coastal cliff faces many metres above the high water mark. The engravings of New Britain Province, on the other hand, are characterised by striking diversity, ranging from possible grinding grooves to heavily carved faces with a relief quality. Most engravings have a curvilinear structure, and several fit into the region-wide motif repertoire of the AES.

**West New Britain**

On Unea, a high volcanic island off the northwest coast of New Britain, seven carved stones decorated with stylised faces and clusters of engraved cupules have been described (Riebe 1967). In almost every case, a natural ridge-line in the rock forms the median line of the face. Elsewhere on the island there is an engraving site displaying ‘simple geometric’ motifs said to be associated with initiation ceremonies (Reibe 1967: 374), and a rectangular shaped stone bearing sharply incised rectilinear motifs, including a double outlined cross enclosed in a double outlined teardrop shape.

An engraving site has recently been reported on the southeastern side of Garua Island (Torrence and Mulvaney 1998). The site consists of four clusters of volcanic tuff boulders for which three primary classes of motifs have been defined: cupules, geometrics and grinding hollows. Common among the geometric motifs are circles (rings), circles with central cupules (cup and ring), and concentric circles (Plate 7). Three double concentric circles occur together on the same boulder face in the form of a triangle, giving the impression of two eyes and a mouth (or nose). The curvilinear form of the Garua engravings is comparable to other AES rock-art, although notably absent are the spirals and enveloped crosses which characterise a number of sites elsewhere (e.g. New Ireland and Milne Bay).

At Voganakai village on the Willaumez Peninsula are a series of red paintings on a consolidated volcanic ash cliff face. The art reaches heights of 10-15m above the ground surface and consists of ‘dots and straight lines’ (Specht 1974). On the north coast of West New Britain are a further two sites recorded by Kamminga (1972): Apoe shelter and Akono.
Sogo. Apoe shelter, near Denga village, contains in excess of 100 sharply incised lines, many of which may be grinding grooves. Akono Sogo shelter, located about 2km inland but also near Denga village, contains both paintings and engravings. I have not seen illustrations of the paintings at this site but the engraved rock-art consists of cupules, circles (rings), circles with a central cupule (cup and rings), concentric circles, face-like designs, and a small number of more rectilinear motifs, such as zig-zags. Slightly to the west of Denga, and about 11km inland in the Angal-Benim region, lies the site of Titikolo. This site is listed in the Papua New Guinea Archaeological Site Survey files and is said to include both paintings and engravings (Janssen 1972; Specht 1979).

On the far western side of the island, near Gie village, is Cao-go, which was visited by Specht in 1967 (Specht pers. comm. 2001). The site consists of engravings on a series of volcanic boulders located on a hilltop and nearby river bed. Motifs are mostly curvilinear and include cupules, various circular forms, faces, parallel lines, semi-circles and spirals. Nearby at Garamati lies the site of Malapapua, which consists of a cluster of volcanic boulders located along a small ridge. Numerous non-figurative forms are present, including circular designs, scrolls, scissor-shaped motifs, wavy lines, triangles, spirals and a few figurative motifs, especially faces and birds. Both of these sites share several scroll/spiral motifs in common with sites elsewhere in the region (e.g. New Ireland Province, Milne Bay Province).

South of Malapapua, on Pililo Island (Arawe Islands), is a rock-art site consisting of red painted forms, including a hand stencil, located 15-20m high on the face of a Pleistocene raised limestone cliff (Specht 1985). A further painted site listed in the Papua New Guinea Site Survey files is Waisisi, located on the Hoskins Peninsula.

East New Britain

The area most intensively surveyed for rock-art in East New Britain is Watom Island. Six sites have been recorded here: four with engravings and two with painted art. All of the engraved art occurs on volcanic boulders, the motifs comprising curvilinear forms such as concentric circles and ovals, circles with central cupules or lines, contiguous circles, and faces. The two painted assemblages are located on exposed limestone cliffs. The paintings at Turtur are composed of a reddish-brown ochre and include an S-shape, a group of short vertical lines, a triangle and another group of vertical lines. Those at Pangulalau are also mostly red (a couple of black motifs have been noted) and include hand prints, triangles, zoomorphs, groups of lines running in different directions, a face-like form, a circle and oval motif, a star, a possible fish, a circle with an internal cross, an anthropomorph, some possible
stick figures, and other geometric forms (Specht 1994). Approximately 100 ‘individual and multiple items’ are said to be represented across a 150m expanse of cliff face (Specht 1979: 79, 1994).

Specht (1994: 6) has observed broad similarities between the painted motifs of Watom and those at Dudumahan (Kei Kecil, Moluccas; Ballard 1988a), lending support to Ballard’s (1992a) proposition that the APT is expressed at many coastal painted sites in the western Pacific. Like Watom, many painted sites which express the features of the APT are located on small off-shore islands, such as Pililo in the Arawe Islands, Boeng on Tanga Island (see below), several islands in Manus Province (see below), and Vatulele in Fiji (see below). The tendency for APT sites to be located on off-shore islands in Near Oceania matches the distribution of a number of Lapita settlements which are thought by some to be associated with an initial movement of Austronesian speakers in Island Melanesia.

Both painted and engraved sites have also been discovered on adjacent New Britain. The Beehive Rocks consists of a painted assemblage on the rock face of a volcanic plug which emerges out of the water in Simpson Harbour, Rabaul. The paintings have been executed in red pigment and stand out on the light tuff rock surface at about 3m above the water level. The motifs include crosses, a circle with an internal cross, an indistinct human figure, a ‘phallic’ motif, and a possible hand (Specht 1966). Other motifs were too indistinct to make out.14 The Beehives rock-art is exceptionally important from the perspective of developing a rock-art chronology for this and perhaps other sites with comparable rock-art. According to evidence presented by Nairn et al. (1995), the volcanic feature on which the rock-art is located can be no older than around 1400 BP. A catastrophic volcanic eruption at this time is said to have devastated the region out to at least 50 km from the source, now underwater somewhere around the middle of the Rabaul Caldera.

The rock-art of New Britain largely conforms with the characteristics defining the APT and AES. One motif which we do find in this region that has rarely been observed in rock-art to the west (except Milne Bay and Umboi) is the face. This motif is especially common in the engraved assemblages of Island Melanesia. Another interesting pattern observed among the engraving sites is the lack of certain motifs found in sites elsewhere in the region; in

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14 A painted cliff site has been reported by Bourke (1976a: 149) in the Rembar Range, but no details of the motifs have been made available. Four other rock-art sites located on the southeast coastline also lack detailed descriptions of the art. These include an engraving site at Ruach village; a site with ‘drawings’ on the Melklo River on the south coast; an engraving site at Malmal Mission; and another engraving site at Pomio (listed on the University of Papua New Guinea Prehistory File, 1972).
particular the enveloped cross and spirals. Scroll-like motifs have been found at Malapapua and Cao-go in West New Britain, but otherwise there is a predominance of circular motifs embellished with central cupules (e.g. Garua; Akono Sogo).

Painted rock-art in New Britain is a classic example of the APT, though I would argue that they lack the curvilinearity (the scroll-like features) of the linear art noted in the APT sites of the MacCluer Gulf. The picture which seems to be emerging in this west-to-east summary of the rock-art of the Pacific is that certain painted motifs associated with the APT appear to find their way into the AES assemblages of Island Melanesia. In Island Melanesia, the APT incorporates a new motif range which is more characteristic of some of the linear rock-art of mainland New Guinea (such as Lake Kutubu, the Sepik and Sialum) which has a far more rectilinear quality. In dating these sites, the rock-art at the Beehives may be instructive. The rectilinear component of the APT, which is distinct from the broadly curvilinear expression of the APT in Eastern Indonesia, appears to have commenced at the Beehives no earlier than c.1400 BP. This date is consonant with Ballard’s (1992a) c. 2000 BP date for the commencement of the APT.

### 3.11.2 Manus Province (Admiralty Islands)

Some 16 sites have been recorded in Manus Province. Of these, eight have been recorded in some detail, and six are formally registered with the PNG Museum. Most of the rock-art is painted at inaccessible heights on coastal cliffs, and thus falls within the definition of the APT (Plate 8 and Plate 9). Two engraving sites have been recorded on Manus Island. One is a basalt boulder located on a hilltop known as Polomou, and the other, Asa-ne-aluh, is a basalt boulder located in a river bed. Both sites are located more than 2km inland. The motifs at Polomou include rows of cupules, hands, feet, and lizard motifs. Bühler (1946-49) was told by an informant that some of the designs depict turtles, cuscus, the moon, sun and crocodiles. Descriptions of the rock-engravings of Asa-ne-aluh suggest a motif range quite different to Polomou (Ballard 1988a). Here, the motifs are mainly non-figurative, and include clusters of concentric circles, a diamond shape with an internal cross, and a complex curvilinear motif consisting of a bisected heart shape. Notably absent from the Manus engraved rock-art are the face-like motifs found in most other regions of Island Melanesia.

Painted rock-art in Manus consists of bichrome and monochrome images in red and/or white, with red being the primary colour used. The rock-art at most sites is highly inaccessible, sometimes occurring tens of metres above the high water mark on sea-cliffs. Among the more densely decorated and intensively recorded assemblages are Papi and Kolmey on Mouk Island, and sites on Malapin and Small Sivisa islands in the Fedarb Group (8km east
of the obsidian stone source of Lou Island) (Ballard 1988a). At all sites the most common motif categories include circles, crosses, zigzags, diamonds and triangles, as well as a number of zoomorphs and anthropomorphs. The 'lizard' form is especially common, and comparable to figures observed at painted sites elsewhere in New Guinea and regions further west. A couple of motifs resembling birds and turtles are also present. The non-figurative motif range is, generally, rectilinear in nature, matching the style of the painted motifs observed elsewhere in Island Melanesia, especially New Britain.

Very little in the way of chronological information has been ascertained from the Manus data, and that which exists does not lend itself easily to interpretation. Ballard (1988a) reports examples of red superimposing white pigment at Papi. At Kolmey, however, a sun motif appears to have been initially painted with red pigment but later outlined in white. At the engraving site of Asa-ne-aluh there are said to be differences in the degree of weathering of some motifs, but it is unclear exactly which motifs are more weathered than others, nor whether certain areas of the rock surface are more susceptible to erosion than others (Ballard 1988a). Spriggs (pers. comm. 2001) has noted that the red pigment art at Pamwak is highly weathered (flaking off the walls) and is therefore unlikely to have survived more than a couple of thousand years. On this basis he argues that the rock-art probably relates to occupation which began in the last 2000 years, as there was a 3000 year hiatus of occupation prior to this time. The perceived similarities between the non-figurative motif range in Manus and New Britain may also provide a clue to the age of the former, based on the dating of the Beehives site. Notably, Dong-son-like motifs, as described by Badner (1972) are missing from the painted sites of Manus and are not very prominent among engravings (Kennedy 1982).

### 3.11.3 New Ireland Province

New Ireland Province possesses both engraved and painted rock-art sites (Figure 3.8). Much of the painted art conforms to the general description of the APT, while the engraved rock-art – which includes concentric circles, spirals and face motifs – shares many of the features of the AES of Island Melanesia and Milne Bay. One of the most striking features of New Ireland rock-art is its remarkable internal diversity, even though most motifs have inter-regional correlates.

**New Hanover**

All of the known rock-art on New Hanover is engraved and occurs on boulders in open locations. Similar motifs are found among engraved assemblages in Milne Bay Province,
and in the painted assemblages in the Sepik and Highland regions, including circular and scroll forms and enveloped crosses.

Lampert (1967) reports a rock-art site at Likding, New Hanover, which is located at the western end of the Tirpitz range. The engravings occur on a flat rock which sits on a narrow ridge. Motifs include several enveloped crosses, pecked-out feet, an outline of a human figure, scroll-like (spiral) geometrics, and other geometric shapes. Bühler (1946/9) also reported rock-art at Likding but it is not entirely clear whether he is describing the same site recorded by Lampert.\(^{15}\) Lampert (1967: 492) comments on the regional extent of the enveloped cross as follows:

The two forms seen at Likding are present on New Caledonia where they are known as *croix simple* à *double enveloppe* and *croix à enveloppe simple* (Oriol, 1948: 35). Both appear as ornamentation on a tapa cloth from the north coast of New Guinea (Bodrogi, 1959: 91) while the doubly enveloped cross together with multi-enveloped examples appear as rock paintings at Batari in the New Guinea Highlands (J. P. White, personal communication; White and White, 1964: 777).

As noted above, the enveloped cross is also present in the engraved rock-art of Milne Bay.

Bühler (1946/9) also describes rock-art at Meteinge, Issibang, Lavongai, Soula, and Meteranga. All of the rock-art at these sites is engraved, with motifs including concentric circles, rosettes, spirals, enveloped crosses, anthropomorphic figures, footprints and faces. Pitts (1967) mentions another engraved boulder located near a mangrove swamp on the southern coast of the island, the motifs including circles, a concentric circle, a concentric circle with internal spokes, an ovoid shape, and three evenly spaced linear designs.

Due to a lack of examples of superimposition, no chronological information has been gleaned for the rock-art of New Hanover.

**New Ireland**

Two engraving sites are known on New Ireland. Gallasch (1974a) reports engravings at Umarah, a limestone cave located on the eastern coast of New Ireland. The motif range is limited, consisting of four faces, lines, and several 'small holes' (presumably cupules). It is suggested that apart from a face motif at the base of the decorated panel, which appears to be recent, the remaining engravings look 'ancient' (1974a: 160). The faces are very large and located about 3m above the floor of the cave. Contrary to the suggestion of Gallasch (1974a: 160), similar engraved faces are known throughout Island Melanesia. The convention of a

\(^{15}\)For this reason I have allocated two separate site numbers to Likding (85 and 86).
single line joining the eyes and nose is particularly prevalent in the region (cf. Big Tabar, below), and bears resemblances to the Type2 Lapita face designs identified by Spriggs (1990b). Bühler (1946/9: 245) has written about a second engraving site in the Tigak area near Kavieng, said to comprise groups of overlapping concentric circles and a semi-circle located on a boulder in a large reef cave.

Peterson and Billings (1965) have reported a rock-painting site at Paruai, located a few kilometres inland from the east coast of New Ireland. The images are all in red ochre, and located on a rock-face about 20m above the ground. There are 10 pictures in total, situated in a more or less horizontal line above a ledge. Peterson and Billings’ informants suggested that the rock-face was at one time a major feature in the landscape, and could be seen from the sea. The inaccessibility of the art and its former coastal location would place it firmly within the framework of the APT. Motifs present include six anthropomorphs (one accompanied by a bird) in relatively dynamic postures, a design resembling a face, and two others which ‘do not immediately suggest any definite subject matter’ (1965: 255). Peterson and Billings’ (1965) description of the site was augmented by Robinson (1969), who identified a further panel of red paintings at the same site located directly below the one already recorded. Anthropomorphs were found on this section of the rock-face, but were described as more ‘stick-like’ and static than those recorded by Peterson and Billings. Spiral/scroll motifs were also recorded in this lower panel. Other regions where painted spiral/scrolls have been noted are the Highlands of New Guinea (e.g. Jimi/Wahgi river valleys), the Sepik provinces, Milne Bay and the MacCluer Gulf (Manga style).

Other limestone caves found on New Ireland containing painted rock-art include Kameribuk (Buang Merabak), Panakina (or Panakiwuk), and Balof 2, each of which was inhabited in the Pleistocene. The rock-art at Buang Merabak includes several black and red hand stencils and prints (Brown et al 1976: 127; Wilde 1975c: 11). The rock-art at Panakiwuk consists of a number of black stencils, including hands and elaborately infilled leaf shapes, located c. 6m above the current floor level. Balof 2 also contains several black hand-stencils. Each of these sites mark further transformation in the patterns observed in this summary of the rock-art of the Pacific. Does the painted art of New Ireland proper represent an eastern rendition of the APT whereby black pigment replaces red? Or are we witnessing an entirely different form of rock-art which is linked to the Pleistocene settlement of the region? An attempt to ‘directly’ date the pigment at these sites is of pressing importance as there is a possibility that it may yield dates earlier than 3500 BP. However, given the rate of preservation observed in other limestone caves in Island Melanesia, it is more likely that the paintings at these sites are related to more recent occupation levels.
Tabar Islands

Thirteen rock-art sites from Simberi and Big Tabar islands have been recorded by Gunn (1986). One of these is a cave containing red paintings; the remaining twelve are engraved boulders, most of which lie in open locations in the middle of river courses. The images at the painted site are simple linear constructions, including a human form. The engraved art consists of a broad range of non-figurative and figurative forms. Most of the non-figurative motifs are curvilinear, including variants of the circle and spiral which resemble some of the rock-art seen on New Hanover. There is considerable stylistic variation amongst the figurative images which include a range of anthropomorphic and face-like forms. One type of anthropomorph, with an outlined elongated torso and flexed arms and legs, is reminiscent of some of the painted rock-art of the Buang Valley and other regions to the west. Other anthropomorphs are more curvilinear in appearance and have no regional counterparts. Gunn (1986: 463) also identified depictions of birds, fish, an eel, sharks, porpoises and a wallaby among the engraved assemblages of this island group.

Tanga

Bell (1938, 1940) reports rock-art in a coastal cave site on the north coast of Boeng Island (Tanga Group) which is said to be associated with love-magic. The cave is nestled into a sheer cliff that rises out of the ocean. To access it requires negotiating a perpendicular rock-face clinging to vines. Bell (1940: 79) writes that the cave contains hundreds of paintings in red ochre, although in the published sketches only two types of motifs are represented: stick figure anthropomorphs and chevrons connected by a central line. One of each of the paired anthropomorphs is depicted with an appendage between the legs, and is interpreted by Bell as a male (1940: 80). The location of this red pigment art, in a coastal cliff which is difficult to access, is typical of the APT identified by Ballard (1992a).

The diversity within New Ireland’s rock-art assemblages presents an interesting picture of possible inter-regional connections. The motifs associated with the New Hanover engraving assemblages are characteristic of a particular component of the AES which appears to have a very specific regional distribution. I refer here to the presence of scrolls, spiral and enveloped crosses which comprise the vast majority of the motifs on this island. In the Island Melanesian region these motifs are specifically (but not exclusively) found on boulders and share strong parallels with the engravings of Milne Bay and the paintings of mainland New Guinea and Eastern Indonesia (e.g. the MacCluer Gulf). There are few examples of the rock-art which is particularly prevalent in the New Britain assemblages.
such as the art of Watom and Garua which consists of a vast range of circular motifs (often contiguous) with central cupules.

The engraved Lapita Type2 (Spriggs 1990b) faces found in Umarah cave on New Ireland are consistent with the Island Melanesian occurrence of this form. Notably, however, these faces are not found in the assemblages of New Hanover where spiral and scroll forms prevail. In the statistical analyses of the next chapter I will be seeking to establish whether there are differences in the spatial distributions of Type2 faces, the circular motifs typical of New Britain, and the spiral forms prevalent in New Hanover. What is becoming increasingly clear is that the motifs which constitute the AES appear to be differently distributed through space.

The Paruai painting site is interesting because, while it falls categorically within the realm of the APT, it is not located on the coast. What is also interesting is that it includes spirals in its motif range, which is a rare find in Island Melanesia as spirals are usually associated with AES assemblages. Likewise, the flexed leg anthropomorphs found in the Tabar islands are more particular to APT assemblages, particularly those in the Buangs. It is these types of sites which may eventually provide clues as to how the APT intersects with the AES through space and time.

### 3.11.4 Solomon Islands

According to Roe (1992a: 107), in excess of 60 rock-art sites have been identified in the Solomon Islands but few have been fully documented or published. There are apparently several painted sites in the region, but information is only available only for those from Bougainville (Roe, pers. comm 2000).

**Bougainville**

John Terrell (1969; 1976) writes of two painted sites, Bubun and Sanopar, located in northern Bougainville on wave cut features in limestone cliffs facing the sea (Figure 3.8). Sanopar consists of both red and black pigment motifs, including a face, several markings (said to be associated with the death of a Big Man), an anthropomorph, a cross and several patches of pigment. The Bubun motifs include a red pigment cross and anthropomorph, both of which bear a resemblance to the motifs at Sanopar. More recently, Matthew Spriggs (2001b) has been told of the presence of several caves and shelters in the Teop-speaking area, including some with painted rock-art, but these sites await systematic recording.
The only report of engraved rock-art on Bougainville comes from Blackwood (1936: 175-176), who describes a 'large stone' (its exact whereabouts are not given) with 'a series of wavy lines' on one side, and a 'deep groove' on the other. Wavy line engravings are also known from Northwest Guadalcanal (see below).

Northwest Guadalcanal and surrounding regions

The most intensively surveyed rock-art region in the Solomon Islands is Northwest Guadalcanal (Roe 1992a) (Figure 3.9). The most common engraved image recorded here is the canoe, which constitutes around 33% of the total number of motifs counted (n=209). Canoe motifs are rarely found elsewhere in Island Melanesia, indicating that much of the rock-art of Guadalcanal may have been produced independently of cultural influences from adjacent island groups. Other motif categories in the Guadalcanal assemblages include footprints, birds, anthropomorphs and crescent shapes, each of which have regional analogues (Plate 10).

While most of the rock-art sites in Northwest Guadalcanal are similar to one another, one stands out from the rest. The rock-art of Vatuluma Posovi (site 119, Figure 3.9), a large solution cave in Poha Valley, appears to be quite different from rock-art observed elsewhere in the Solomon Islands. There are two interesting features to this site which may explain why it is so distinctive. The first is that it is a cave. As noted by Specht (1979, and see above), most engraving sites in the western Pacific are associated with boulders rather than caves. Could it be, therefore, that boulders and caves are associated with different types of engraved motifs? The second feature is that much of the engraved rock-art at Vatuluma Posovi is inaccessible. Inaccessibility is usually a trait associated with the painted rock-art of Island Melanesia, although inaccessible engravings have been recorded in both the Solomon Islands and Vanuatu (see Chapter 6). Is it also possible, therefore, that the inaccessible engraved rock-art of limestone caves is more similar to the inaccessible painted motifs found elsewhere in the western Pacific? Unfortunately, the inaccessible rock-art at Vatuluma Posovi was not recorded due precisely to problems of access (Roe 1992a), and is therefore unavailable for comparison. However, there is now sufficient data on the inaccessible engraved rock-art of Vanuatu to enable this question to be addressed (see Chapters 6-8).

Strong similarities are said to exist between the rock-art of Guadalcanal and Vella Lavella, as both share serpentine forms, rows of dots, canoes and fish (Roe 1992a). Motifs on a boulder in the Vangunu crater (south of New Georgia in the western Solomons) also resemble the Guadalcanal material, especially the canoe forms and an anthropomorphic motif. One of the
major differences between Northwest Guadalcanal and other Solomon Island assemblages is
the lack of scroll and spiral forms in Guadalcanal, both of which are found at the Simbo and
Vella Lavella sites (Roe 1992a: 112).

A comparison between the Guadalcanal motifs and Frimigacci and Monnin’s categories for
New Caledonian rock-art revealed that 50% of the New Caledonian categories are
represented in Guadalcanal. One of the major differences exists in terms of the frequency of
canoe forms, with only three cases found in New Caledonia (Roe 1992a). Guadalcanal rock-
art also shares footprints, enveloped crosses and face designs with New Hanover, and
concentric circles and anthropomorphs with Tabar.

The best dated engraved rock-art in the Island Melanesian region derives from Guadalcanal.
Roe’s re-analysis and re-survey of Vatuluma Posovi considered a number of sub-surface
engravings, yielding a minimum age for their production of 2920±110 years b.p. (Roe
1992a: 111). Among the sub-surface engravings were a cross encased by an irregular shape,
a linear motif, a fish, and a curvilinear form incorporating a circle and central cupule. Roe
(1992a: 111) concluded that ‘[o]n present evidence ... the tradition of rock engraving in the
southern Solomons is certainly as old as the Lapita settlement of the area and could possibly
be much older’.

One of the most striking features of the Vatuluma Posovi material is its curvilinearity. While
curvilinearity is a feature of much of the engraved rock-art of Island Melanesia, it is less so
of other sites in Northwest Guadalcanal. The age of other rock-art in the Guadalcanal corpus
cannot therefore be easily inferred from the minimum age obtained for the rock-art of
Vatuluma Posovi. Having said this, an enveloped cross motif recorded at a boulder site in
the Upper Poha Valley is comparable with a design observed on a Lapita sherd from Gawa
in the Reef Islands. This suggests that at least some of rock-art elsewhere in Guadalcanal
could be as old as Lapita.

Fox (1924) describes three engraving sites in the Arosi area of northwest San Cristobal (now
Makira), all of which display depictions of footprints, some larger than life-size. Footprints
are found in the engraved rock-art of various Island Melanesian regions (e.g. New Hanover),
with oversized varieties occurring in Kiribati and on Pohnpei in Micronesia (Rainbird and
Wilson 1999). Two of the San Cristobal sites include what are regarded as depictions of
frigate birds (Fox 1924), and one site - Madoa - displays anthropomorphs, a ‘crescent-moon
ornament’, a turtle and a crocodile.
One of the most important issues arising from this review of Solomon Islands rock-art is the difference between motifs found on boulders and in limestone caves. Apart from a single spiral at a site on Kitava in Milne Bay (PNG), and an enveloped cross surrounded by a circle recently discovered at a cave site in north Efate inVanuatu (Spriggs pers. comm. 2002), there are no examples of enveloped crosses, scrolls, spirals or Type 1 faces (Spriggs 1990b) in limestone caves in Island Melanesia. Even in areas where engravings are found in limestone caves, such as the Solomon Islands and Vanuatu, each of these motifs always occurs on boulders or at open sites. The presence of enveloped crosses on Lapita pottery provides a minimum age for the occurrence of this motif in Island Melanesia and elsewhere.

3.11.5 New Caledonia

Although there is some painted rock-art in New Caledonia, engraving is the only category to have been studied in any detail. Engraving sites occur throughout New Caledonia, and have been subjected to one of the most intensive rock-art recording programs in the western Pacific (Luquet 1926; Oriol 1948; Chevalier 1959; Frimigacci and Monnin 1980; Monnin 1986). Daniel Frimigacci and Jean Monnin, who are responsible for most of the recent recording and analysis of New Caledonian rock-art, have developed a classification system for the art which places each motif into one of thirty motif classes, including circles, cupules, spirals, enveloped crosses, zigzags, sinuous lines, bands of concentric arcs, rectilinear and rectangular motifs, human figures, human footprints, vulvae, lizards, fish and turtles. Motifs are predominantly non-figurative.

Four techniques of engraving have been described by Monnin (1986: 41-42): (1) pecked and abraded; (2) pecked (although these are uncommon, and thought to be possibly unfinished ‘pecked and abraded’ forms); (3) incised; (4) intermediate between 1 and 3 (in between a ‘u’ and ‘v’-shaped groove). Group 4 motifs tend to be found at coastal sites, and many of them appear to be recent as they include names and other words. Group 1 images are found in all states of preservation from poor to well preserved, whereas 2, 3 and 4 are fairly uniformly preserved. Some of the group 4 motifs are protected by sand on beaches. Comparisons with old photographs show that there has been little deterioration of the engravings since about the 1920s. The antiquity of New Caledonia’s engravings can really only be speculated upon in terms of differential conservation (Monnin 1986: 43). There has been no real study yet of locational characteristics but it appears that engravings are distributed across all rock types (i.e. soft and hard rocks).

Only one painted site has been reported in the publications on New Caledonian rock-art – a cave site (Wanaham) located on Lifou, in the Loyalty Group. According to Frimigacci and
Monnin (1986: 38), both positive and negative images of hands are present. Another painted cave site has also been found on the island of New Caledonia but no further details of the nature of the art have been provided (Spriggs and Mumford 1992: 135; Christophe Sand, pers. comm. 2001).

3.12 The rock-art of Micronesia

Rock-art in Micronesia seems to be relatively rare by comparison with other parts of the Pacific. In the west, figurative drawings are found in caves in the Marianas (Thompson 1932; Henrickson 1968; Fritz 1989: 41); bas-relief carvings have been noted on the stone platforms on Yap (Hunter-Anderson 1985); and both engravings and paintings are known in the Palau Islands (McKnight 1964; Schmidt 1974; Gregory and Osborne 1979). According to Gregory and Osborne (1979: 299), similar geographical and stylistic conventions are shared by six rock-art sites in Palau. Paintings at a limestone cave on Aulong include red motifs located between 10m and 20m above the ground, and those on Aluptaciel – which are also red – are located high up on a white cliff (Osborne 1966: 439). Both sites thus display attributes which situate them within the APT, with strong connections to the painted assemblages of Eastern Indonesia (Schmidt 1974). Particularly strong relationships have also been noted between the motifs at Aulong 4 and those of the Admiralty Islands, the four-pointed star being one of the more unusual motifs shared by the two regions.

Petroglyphs have been reported by Clune (1977) from Chuuk Lagoon (Wonei peninsula), on Tol Island, as well as on Moen. The Tol Island rock-art includes what have been described as ‘pandanus’ trees, and the Moen Island rock-art includes images resembling boats. Petroglyphs have also been reported by Turbott (1949) on Kiribati, including a combination of very large footprints and life-sized ones, as well as depictions of lizards and a basket.

The largest assemblage of rock-art known in Micronesia is a petroglyph site on Pohnpei known as Pohnpaid (Figure 3.11). Among the motifs are oversized and normal-sized footprints (comparable to those on Kiribati) and a form which resembles a combination of a sword and paddle, termed ‘swaddles’ by the recorders (Rainbird and Wilson 1999). The rock-art at this site is located on two geological components, a terraced outcrop of metamorphic rock and a nearby cluster of metamorphic boulders. The motifs on the boulders are quite different to the motifs on the terraced outcrop and include a large number of enveloped crosses. Other sites on Pohnpei include an engraving associated with a lolong (stone tomb) in Nett, and a footprint petroglyph located at the top of a waterfall in Kittu.
The predominance of enveloped crosses on the boulders at Pohnpaid (one case has been found on the adjacent terraces) accords with a prior statement linking this motif to boulder rock-art in Island Melanesia and the Massim area. Oversized footprints, noted on Kiribati and at Pohnpaid, resemble those described on San Cristobal in the Solomon Islands. Boat motifs, recorded on Moen and at Pohnpaid, have also been recorded in the Solomon Islands. Some of the engraved motifs seen in Micronesia have analogues in painted assemblages elsewhere in the western Pacific, including sun-symbols (Pohnpaid) and lizard forms (Kiribati).

As described in Chapter 2, the Micronesian region was colonised by historically separate movements, starting at the Marianas around 3500 years ago and ending with the settlement of most of the central and eastern islands by about 2000 BP. Due to its diverse historical origins, ‘Micronesia’ as a geographical term has no cultural significance (Rainbird forthcoming). For the purposes of this thesis I have selected one site in the ‘Nuclear Micronesian’ language area for comparison with rock-art elsewhere in the western Pacific: Pohnpaid. A maximum age of 2000 BP is available for the rock-art site by virtue of the fact that Pohnpei appears not, on current evidence, to have been settled prior to this time.

3.13 Fiji-Western Polynesia

It is possible that some of the rock-art of Vanuatu and other parts of Island Melanesia was produced during a period of direct contact with western Polynesian communities (especially over the last 1000 years when episodes of migration from the east occurred), and that this contact may have had a direct impact on Island Melanesian graphic systems.

3.13.1 Fiji

Apart from an impressive painting site on Vatulele, most of the rock-art of Fiji is engraved (a total of 16 sites), and consists of (a small range of) non-figurative motifs (Figure 3.10). Palmer and Clunie (1970) propose two main categories for the engravings of Fiji: rectilinear and curvilinear (dominated by the concentric circle). Much of the engraved rock-art of the Society Islands, the Marquesas and Hawai‘i has a rectilinearity reminiscent of the non-figurative engravings of Fiji.

In the rectilinear category are two engraving sites described by Snow (1953): Dakuniba (southern Vanua Levu), and Sawa-i-lau (Yasawa Group). Dakuniba consists of a cluster of

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16 As I have not seen the images of boats from Moen, it is unclear whether they are stylistically similar to those in Northwest Guadalcanal.
17 Ewins (1995: 68) reports being told of a further two painting sites, neither of which he has seen, located on Ovalau and Lau.
inscribed stones (*vatuvolavola*) dissected by a walking track. The Sawa-i-lau engravings are located on a boulder inside a limestone cave. From the images in Snow’s publication it appears that most of the engravings at these sites are non-figurative and consists of arrays of sharply angled and often overlapping lines.

In the curvilinear category are two sites described by Hill (1956): Vuinadi and Na Savusavu. The Vuinadi engravings (Netawa Bay) are situated on a large boulder, the range of motifs including concentric circles, a leaf-shape, a circular motif, a T-shape with circles at each end of the horizontal line, and horizontal lines of cupules. At Na Savusavu (Yasawa Group) the motifs include variations of a circle with a central cupule. Some motifs consist of multiple concentric circles, while others are decorated with rays emanating from the outer rim. Also among the sites in the curvilinear category is a boulder on the island of Beqa which displays spirals according to Phillips (1951) and concentric circles according to Palmer and Clunie (1970).

The most intensively recorded site in Fiji is a painting assemblage located on the coastal cliffs of north-west Vatulele. According to Ewins (1995: 23), degrees of weathering and calcareous accretions associated with some motifs suggest a considerable antiquity for the site, possibly of ‘Lapita’ age. Ewins (1995) divided the site into nine panels and eight motif categories: (1) human figures, (2) human faces, (3) hands, (4) birds, (5) leaves, (6) sea creatures, (7) voyaging canoes, and (8) abstract symbols. Some of the ‘muscled’ human figures at the site display characteristics which Ewins regards as Polynesian in both ‘stance’ and ‘form’. These are thought to most closely resemble engraved motifs common among Hawai‘ian rock-art assemblages (Ewins 1995).

The most common images at Vatulele are human faces, but these are significantly different from the face motifs observed among the engraving assemblages of the Bismarck Archipelago (e.g. Umarah, New Ireland). The rayed lines emanating from the head and the elaborate linear detail on the face of the Vatulele paintings are attributes observed among engraved face motifs at Bisiai (Normanby), Lohomunidabu (Central Province), Pohnpaid (Micronesia), and several sites on Malakula (Vanuatu). Painted face motifs are rare in the Pacific region.

Vatulele falls well within the boundaries of the APT. The primarily red paintings occur on a cliff-face at a considerable height above the high water mark (Ewins 1995: 65). Based on

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18 It is possible that Snow (1953) also makes reference to this site, although he states that the rock-art is located on a cliff-face rather than a boulder.
both stylistic and technical criteria, Ewins draws parallels between some of the Vatulele images and the Tabulinetin rock-art of the MacCluer Gulf (West Papua). Similarities include the presence of hand stencils (which are regarded as among the earliest motifs at this site), the use of red ochre, and the presence of anthropomorphs, fish and animals. Ewins (1995: 63) concludes that:

Vatulele artists chose a remarkably similar gallery site to those chosen by Austronesian peoples in a large number of sites in Western Melanesia, that both use red staining material, and that both included zoomorphic and anthropomorphic elements in their art.

Intriguingly, one of the more unusual ‘hand stencils’ at Vatulele is identical to examples observed at Panakiwuk (Panakina), New Ireland. If cultural connections spawned this similarity then it is unlikely that this motif at Panakiwuk is of Pleistocene age.

Concentric circles and other curvilinear forms are commonly found in the rock-art of Island Melanesia, suggesting the possibility of influence (in either direction) between the engraved rock-art at Vuinadi and Na Savusavu and similar art to the west. The rock-art assemblages of Dakuniba and Sawa-i-lau, however, have a distinctive rectilinear quality rarely found in Island Melanesia, being more common in Polynesian engraving assemblages. A lack of dates for the engraved rock-art of Fiji (and indeed anywhere in the region) makes it extremely difficult to situate this rock-art within a temporal framework or to speculate on directions of influence. On present evidence, however, the combination of Island Melanesian and Polynesian elements in the rock-art of Fiji suggests an ‘intermediate’ status, and implies possible cultural links to both the west and east. The presence of painted anthropomorphs on Vatulele which resemble engravings in Hawaiian rock-art is suggestive of Fiji’s eastern connections, while their coastal location and relative inaccessibility imply links to the west.

There has been little speculation concerning the age of Fiji’s rock-art, other than Ewin’s (1995) proposal that the paintings at Vatulele may be of ‘Lapita age’. At Vuinadi (Natawa Bay, on Vanua Levu island), Hill (1956: 76) remarks that the curvilinear art gives the impression of being of ‘great age’, as the edges of the incised grooves are blunt as a result of weathering over a long period of time. In contrast, rock-art located inland from Malake (between Yasawa and Valovoni, Vanua Levu) is thought have been produced relatively recently due to the presence of post-contact images, including an ‘aeroplane with a propeller’ (Hill 1956: 83). Circular motifs with central cupules which are similar to forms observed at Na Savusavu have a minimum age of c. 3000 BP in the Solomon Islands. If a connection
between the rock-art of the Solomons and Fiji can be established, Na Savusavu may contain some of the earliest art in Fiji.

### 3.13.2 Tonga and Samoa

Very few sites are known from Tonga and Samoa, and those that have been documented consist entirely of engravings (Figure 3.10). Whether the paucity of rock-art in these regions is indicative of sampling bias is difficult to judge at this stage; only systematic survey will determine this for certain.

Three petroglyph sites are known from Tonga: one on Tonumea, another on the langi walls on Tongatapu, and a third on an upraised limestone rock on Telikitonga (although a conflicting description places the site on Telekivavau) (Palmer 1965). Only the rock-art at this third site has been described in any detail, the motifs including ellipses, circular motifs with linear appendages, a cross, and anthropomorphic forms. Palmer (1965) suggests that the anthropomorphs at this site are comparable to those found in the rock-art galleries of Pitcairn, the Marquesas, and the Society and Hawaiian Islands (see section 3.14 below).

Burley (1994: 511) has also reported the existence of a carved foot motif (right plantar view), and 'a series of enclosed, spaced perpendicular bars spread along a panel of 1.8m', located on stones which forms part of a royal tomb on 'Uiha Island (Ha'apai).

Engravings have been found at three sites in Samoa – at Leone and Leata on Tutuila, and at Fitiuta on Ta'u. Four groups of petroglyphs have been defined at Leone, the most common motif among them being a central cupule surrounded by a circle of pecked holes (Kikuchi 1963: 165). Other motifs at this site include a possible anthropomorph, a paddle, a human foot, and a squid or octopus. The engravings at Leala include 'sailing craft', names and squares, most of which are known to have been produced by boys from a nearby school in recent times (1963: 165). The site at Fitiutu on Ta'u consists of only two engravings, one resembling a fishhook with nine holes surrounding it, and the other a cluster of four to five holes.

The rock-art of this region appears to be distinctly unlike that reported from the western Pacific and, as noted by Kikuchi (1963), more similar to the engraved rock-art of central and eastern Polynesia. To test this perception, some of the rock-art of Tonga and Samoa is included in the motif analyses presented in Chapter 4. It is assumed that the rock-art of this region will distinguish itself statistically from that found further to the west.
3.14 The rock-art of Central Eastern and marginal Polynesia

While the rock-art of Central Eastern and marginal Polynesia is not directly considered in this thesis, it is briefly described here in order to provide a sense of the continuities and discontinuities between the rock-art of the western Pacific and adjacent regions.\(^{19}\)

3.14.1 The Marquesas

The Marquesas Islands Rock Art Project, which commenced under the direction of Maeva Navarro in 1984, has since been further developed by Sidsel Millerstrom (1988, 1990, 1992, 1997). Much of the rock-art of the Marquesas is homogeneous, suggesting to Millerstrom (1997: 181) that it was produced within a framework of inter-valley and inter-island contacts. A total of 6331 individual petroglyphs, 110 paintings, and 81 ‘human stone sculptures’ have been recorded. Five motif categories have been identified: anthropomorphs (including disembodied portions, such as faces), zoomorphs, material objects, geometric designs, and plant forms. Circular geometric motifs represent the most common category but cupules are also common, often being incorporated into the designs of other forms. Engravings are exclusively found on basaltic stones, the main methods of production being pecking, pecking and abrasion, and incision. Intaglio and bas-relief (produced by pecking and abrading) images also occur. Evidence of superimposition in the region suggests that the earliest rock-art consists of rectilinear anthropomorphic forms that were either pecked, bruised, or pecked and abraded. Bas-relief, a technique used in the engraved art of Easter Island, New Zealand and occasionally Hawai‘i, is thought to have emerged later. Much of the rock-art of the Marquesas is found in association with specific architectural features, such as raised house features (paepae), sacred stone structures (ahulme‘au) and communal ceremonial complexes (tohua).

Rock paintings are found in six shelters on Hiva Oa. All have been produced using red pigment and are stylistically similar to each other. The motif categories present among the painted assemblages are similar to the engravings of the Marquesas, although stylistically quite different. Motifs include anthropomorphs, quadrupeds (e.g. dogs), marine animals and a range of non-figurative forms.

The engraved and painted rock-art of the Marquesas demonstrates a stronger affinity with the rock-art of other parts of Polynesia than with Island Melanesia, although several engraved

\(^{19}\) In this section I describe only the larger bodies of rock-art of Central Eastern and marginal Polynesia; however sites are also known from the Australs, Tubuai, Rapa and Pitcairn. There are no reports of rock-art from the Tuamotu or Cook archipelagoes (Millerstrom 1997: 194).
circular and face motifs (*mata komoe*) do bear a close resemblance to rock-art documented in the Bismarck Archipelago.

### 3.14.2 The Society Islands
The engraved rock-art of the Society Islands, originally examined by Kenneth Emory (1933) under the auspices of the Bernice P. Bishop Museum, has received little archaeological investigation by comparison with other rock-art regions of Polynesia. One of the most common images is the turtle, which is found extensively throughout the Pacific (Rolett 1986), but there are also a large number of stick-like forms which closely resemble engraved figures from Hawai‘i and the Marquesas.

### 3.14.3 Hawai‘i
The rock-art of Hawai‘i is currently being systematically recorded by Georgia Lee and Edward Stasack (1999), with 31,640 petroglyphs already listed in a computer data-base. A relative chronology has been proposed for the art of this region based on a perceived evolution of the anthropomorphic form, from simple rectilinear stick figures through to triangular torsos and finally to muscular-bodied forms. Chronometric dating on some of the rock-art of Kaho‘olawe Islands offers support for this relative sequence (Stasack *et al.* 1996). Most of the figurative rock-art in Hawai‘i is rectilinear and very different in style to that of Island Melanesia (apart from Fiji). However, the (mainly curvilinear) non-figurative component, which consists predominantly of circle and cupule combinations, has a number of western Pacific counterparts.

### 3.14.4 Easter Island
The most intensively and thoroughly recorded rock-art region in the Pacific is Easter Island. In 1981 Georgia Lee directed a survey of the island’s rock-art, her work culminating in a monograph (Lee 1992). Most of the rock-art on the island takes the form of curvilinear engravings, occurring primarily on volcanic boulders but occasionally also in caves. A variety of techniques appear to have been used, including incision, pecking and/or abrasion, bas-relief and intaglio. A few paintings have also been discovered on the island, generally located in caves and often found in association with engravings. At one site – Ana Kai Tangata – a panel of red painted birds (some partially outlined in white) is found on the ceiling of the cave well out of arm’s reach. Painted rock-art is also found on the offshore islet of Mota Nui, famous for its role in the bird-man cult.

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28 This also casts serious doubt on Ewin’s (1995) proposition that the muscular-bodied painted figures on Vatulele represent a proto-Polynesian art.
Lee (1992: 30) has defined 11 motif types for the rock-art of the Easter Island. Much of the rock-art is figurative, including anthropomorphs, disembodied anthropomorphs (including vulvae, hands, feet, faces, eyes), man-bird combinations, birds, marine creatures, terrestrial creatures, ceremonial objects and ornaments, watercraft, plant forms and objects of material culture. A range of geometric motifs are also represented, the most common being the cupule \( n=4600 \). Komari (vulvae) are the most common figurative motifs, followed by faces, and bird-men.

Of the figurative motifs, Easter Island’s engraved faces bear the closest resemblance to rock-art seen elsewhere in Polynesia (particularly the Marquesas), and Island Melanesia. The stick figure anthropomorph, the most common figurative motif in the Marquesas, Hawai‘i and the Society Islands, is entirely absent from Easter Island. The only connection between the rock-art of Easter Island and Hawai‘i appears to be the ‘bird-man’, with several bird-man images found on three different islands of Hawai‘i. Lee (1992: 5) rejects the idea put forward by Lavachery (1976) and Ferdon (1961) that the bird-man arrived as an ‘artifact or memory from South America’, claiming that imagery combining human and avian traits can be tracked back across the Pacific to Southeast Asia.

### 3.14.5 New Zealand

Both painted and engraved rock-art is found in New Zealand. Given that the settlement of New Zealand has occurred by about 800 BP (Anderson 1991), none of the rock-art of the region should be older than this. Engravings are generally described as being more common in the North Island, and paintings are thought to predominate in the South Island (Fomison 1962; Ambrose 1970; Bain 1985; Furey 1989). Much of the engraved rock-art is pecked and abraded but there are also several forms which have been produced in bas-relief, a technique used in other parts of Polynesia (especially on Easter Island). The painted art of the South Island has largely been rendered with dry pigment, and features both red and black images. The engraved rock-art of the North Island is diverse in both style and subject matter, while the rock-drawings of the South Island are relatively homogeneous.

Some of the painted rock-art in the South Island is found high up on rock-surfaces in inaccessible locations. Trotter and McCulloch (1971: 11) report that ‘[s]ome of the most inaccessible are found in South Canterbury where twenty to thirty feet up a rock face are a number of black drawings’. A large proportion of New Zealand’s painted rock-art is found in limestone shelters and consists of figurative motifs, particularly anthropomorphs. The most common is a frontally depicted anthropomorph with flexed arms and legs. The torso is often partially infilled with pigment with a blank strip down the centre. Other
anthropomorphs occur in profile, and occasionally two anthropomorphs are figured back to back. Also common are depictions of images which have been termed 'bird-men'. Formally these figures are very different to the 'bird-men' of Easter Island rock-art (above), their legs and torsos being more similar to the South Island depictions of anthropomorphs described above. Other figurative motifs are found in both North and South Island rock-art, including dogs, seals, birds and fish. Anderson (pers. comm. 2001) has suggested that the similarities between many of the figurative drawings of the South Island, particularly in terms of degrees of 'stylisation', render many images ambiguous. For instance, through only slight alteration, a human figure can be transformed into a bird, or a dog into a dolphin.

Large numbers of non-figurative forms are also known throughout New Zealand. ‘[S]ome appear to be purely geometrical, some abstractions from vertical forms, while others are random curvilinear designs often incorporating geometrical or abstract components’ (Trotter 1971: 239). Rock-art is also known from the Chatham Islands, including a spectacular cave containing clusters of what look like engravings of seals. These islands are more renowned, however, for their dendroglyphs, commonly depicting anthropomorphs carved into the bark of karak trees (Trotter and McCulloch 1971: 25).

Stylistically, the rock-art of New Zealand is unlike rock-art seen elsewhere in Central Eastern and marginal Polynesia. The only perceptible similarities are the presence of particular figurative categories in the rock-art of the South Island (e.g. anthropomorphs, dogs) which are common to engraving assemblages in both the Marquesas and Hawai‘i. The curvilinearity and design elaboration associated with some of the North Island engravings are also reminiscent of engravings found on Easter Island. The 'flexed' posture associated with much of the South Island figurative ‘drawings’ and the trait of ‘inaccessibility’ are more commonly observed among the painted rock-art of Island Melanesia, mainland PNG and Island Southeast Asia. Whether or not these similarities can be attributed to shared influence is a question for future research. However, unless there was direct contact between South Island and western Pacific communities, or the ‘flexed’ trait was transmitted via media other than rock-art, it is unlikely that an argument for cultural continuity could be convincingly made.

The South Island Maori Rock Art Project (Te Kaupapa I Nga Tuhituhi Tawhito o Te Wai Pounamu) was started in 1989 by Atholl Anderson with the support of the New Zealand Historic Places Trust, and was adopted in 1993 as a tribal project by the Ngai Tahu iwi, when Anderson moved to Australia. Aimed at recording all the evidence of Maori rock-art in the South Island of New Zealand it employs a full-time project officer, Brian Allingham,
and, using both large format photography and dot-for-dot tracing, it has produced 8 volumes of unpublished reports, plus a massive archive of recorded material. This remains under tribal embargo until the end of the project. In some areas of the project the number of recorded rock-art sites has increased by 300%, of which a significant proportion is engravings, once thought scarce in southern New Zealand (Anderson, pers.comm.)

3.15 An overview of the rock-art of the Pacific

In this chapter I have outlined the principal models available to account for western Pacific rock-art, and provided a region-by-region description of the rock-art of the western Pacific (excluding Vanuatu which is reviewed in Chapter 6). The first part of this thesis has elaborated upon two of these models, referred to here as the APT and AES, both of which are founded on a systematic analysis of the distribution of non-motif variables (e.g. technique, geology, accessibility) and an intuitively derived connection between sites based on motif similarities. In the process of summarising the rock-art of the Pacific islands, it seems reasonably clear that elements of the APT and AES are indeed found throughout the region, and that inter-regional similarities may reflect inter-cultural connections. What has also become evident, however, is that current perceptions of the APT and AES have two main shortcomings. The first of these relates to the relationships between the APT, the AES and current language areas, and the second relates to the distribution of motifs. These shortcomings suggest that neither the APT nor the AES is as distinct or cohesive as might once have been thought:

3.15.1 The APT, AES and language

The main components of the APT and AES are not restricted exclusively to Austronesian (AN)-speaking areas. In the case of the APT, red rock-art has been noted in inaccessible locations in non-Austronesian (NAN) speaking areas, such as Lake Kutubu in the Southern Highlands. While it remains highly probable that the APT developed with the movement of Austronesian-speaking people (the close correspondence between rock-art attributable to this tradition and isolated pockets of AN speakers is fairly convincing), a more developed model is required to account for the diffusion of APT traits into the NAN-speaking Highlands and lowlands areas of Papua New Guinea. Ballard (pers. comm. 2001) has offered a feasible explanation for this diffusion based on motif transfer between rock-paintings and barkcloth. The movement of barkcloth and associated rituals and ceremonies involving burial between coastal and highland regions may indeed account for the presence of APT traits in NAN-speaking areas such as Lake Kutubu and the Sogeri area.
Motif elements considered to be associated with the AES are also found in the NAN-speaking Highland regions, such as scroll and scissor forms (e.g. Jimi/Wahgi river valley and the Sepik). Both of these motifs are found extensively on a range of ethnographic materials which would seem to indicate that they have been transmitted across a range of media, perhaps over several millennia. As for the APT, the AES needs to be built into a model of design transfer which accounts for the presence of AES motifs in NAN-speaking areas, perhaps via the movement of a range of mobile decorated items. Such a model should also take account of the occurrence of Proto Oceanic linguistic terms which are used among non-Austronesian-speaking Highland communities, such as PAN *beRek “domesticated pig” (Blust 1995: 473).

3.15.2 The AES, APT and motif distribution

The second problematic feature associated with the APT and the AES relates to the illusion of a cohesive set of motifs being associated with each entity. Admittedly, neither entity was originally conceived on the basis of a clear picture of the motif distributions associated with each. However, in reviewing the presence and absence of motifs found in each Pacific region, dramatic differences between the motif contents associated with the APT can be seen from west to east. Some of the motifs which Ballard originally associated with the APT were said to be found on Metal Age artefacts, such as the boat motifs on Dong-son kettle drums. Painted motifs associated with the Metal Age, however, are generally more prevalent amongst the APT sites of Eastern Indonesia and West Papua than they are at the APT sites of Island Melanesia. In Island Melanesia, motifs found in connection with APT sites tend to be far more rectilinear than the art seen in the MacCluer Gulf, for example. In fact, APT motifs appear to be more similar to motifs observed on mainland PNG, particularly at those lowland and Highland sites which may bear the traces of some affiliation through contact with the APT phenomenon.

Variations in the distributions of motifs that have been linked to the AES have also been observed. In Island Melanesia, for example, I have discerned at least two sets of differently distributed motifs. The first includes variants of the scroll and the enveloped cross. These motifs, often found together within a single engraving assemblage, have been observed at specific sites in Milne Bay, New Ireland (New Hanover, Tabar), New Britain (Cao-go), the Solomons (Vella Lavella, Simbo), New Caledonia, and Micronesia. It is most common to observe these motifs on boulders, which are usually of volcanic origin. Notably, variants of the scroll are commonly associated with the APT in Eastern Indonesia, especially within the Manga style in the MacCluer Gulf. The enveloped cross has been noted in numerous painted assemblages throughout mainland New Guinea, in both NAN and AN-speaking regions.
Whether or not there has been a transfer of these particular motifs from the APT to the AES is a possibility that will be explored again in Chapters 4 and 9.

The other group of engravings which is commonly associated with the AES are circles with central cupules and face-like motifs. In general, circles with central cupules and the scroll and spiral forms just described are not commonly found together at the same site (Cao-go and Malapapua, West New Britain, being two exceptions). One of the aims of the next chapter is to determine whether the distinction between these two sets of motifs has any statistical basis.

Throughout this chapter I have alluded to various pieces of evidence which will assist in developing a chronological framework for the rock-art of the Pacific. I am reluctant at this stage, however, to present a case for the emergence of particular groups of rock-art motifs and styles without having yet determined whether the motif connections I have proposed have any statistical basis. I will revisit the significance of the spatial evidence presented in this chapter at the end of Chapter 4, in the conclusion to this part of the thesis devoted to western Pacific rock-art. In Chapter 9, after examining the rock-art of Vanuatu, a temporal sequence for the emergence of various western Pacific rock-art traditions will be defined.

3.16 Conclusions

While there is clearly considerable local variation in the rock-art of the western Pacific, such as the unusual leaf stencils at Panakiwuk (New Ireland Province), there are also trans-regional similarities, such as the presence of red pigment high up on cliff faces, and the recurrence of the enveloped crosses in the painted sites on the Papua New Guinea mainland and in engraved boulder art of Island Melanesia. Various scholars have proposed models to explain both trans-regional similarities and local diversity in the rock-art of the western Pacific. These models are summarised here, with a view towards testing and refining them via a series of statistical comparisons of rock-art motifs, as presented in Chapter 4.

1. The rock-art of the Pacific has thus far been assessed primarily within pre-existing interpretive frameworks derived from archaeology, linguistics and other disciplines. Evolutionary paradigms have been the focus for a great deal of research undertaken in the Pacific region, resulting in projects which ultimately search for the origins of particular cultural features (Kirch and Green 1987, 2001). Thus, for example, in the same way that Polynesian languages have been traced back to a homeland in Southeast Asia, the recurrence of certain rock-art motifs across the region has been attributed to ‘adoption and adaptation from shared origins’ (Rosenfeld 1988). If, as originally
proposed by Rosenfeld (1988), the rock-art of the Pacific transforms as a result of movement away from shared origins, then a clinal distribution should emerge in a statistical comparison of motif forms across the region.

2. Golson (1972a, 1972b) and Specht (1979) have proposed that many of the rock-art motifs seen in the engraved rock-art of the western Pacific were influenced by the Dong-son ‘ship-of-the-dead’ complex, which is thought to have originated in South China or North Vietnam and to have moved through Indonesia and the Pacific Islands. It is expected that rock-engravings which were influenced by Dong-son art (or by art traditions ancestral to both Dong-son and the rock-engravings) will form a statistically identifiable group that extends across a broad region.

3. Hugo (1974) has argued that the geographic and formal distinctions between painted and engraved rock-art are illusory. He proposed that, if the sites of the New Guinea Highlands are excluded from consideration, there is in fact a strong overlap between painted and engraved motifs in coastal regions, especially those of circular form. This statement is later challenged by Rosenfeld (1988: 134), who wrote that,

There seems to be surprisingly little overlap between the motif range of paintings, which are primarily a mainland trait, and of engravings which are predominantly a trait of island Melanesia.

The first multivariate analysis presented in Chapter 4 addresses this issue directly by statistically comparing circular forms between coastal rock-art sites in eastern New Guinea and Island Melanesia.

4. Specht (1979) and Ballard (1992a) have both related the distribution of painted and engraved rock-art traditions/styles to current Austronesian-speaking areas. Specht (1979) and Rosenfeld (1988) have both observed that painted and engraved rock-art have different regional distributions. And Hugo (1974) has suggested that the motif ranges associated with paintings and engravings are similar. The statistical analyses presented in Chapter 4 seek to explore the merits of each of these propositions. The first aim will be to ascertain whether the rock-art of the region falls into two statistically distinguishable groups: one which includes painted sites and another which includes engraving sites. The next step will be to assess the relationship between paintings and engravings according to regional variation. If painted and engraved rock-art motifs are indistinguishable across the region, but paintings are more prominent in the west and engravings in the east, then it might be possible to propose a single tradition of rock-art involving a clinal transformation from paintings in the west to engravings to the east. If,
on the other hand, painting and engraving sites differentiate on the basis of motifs but show no regional variation, then other types of explanations may need to be invoked. Perhaps, then, painted and engraved rock-art emerged in Island Melanesia at different times, or were associated with distinct social functions? These and other explanations are considered in light of the statistical results presented in Chapter 4.

5. Ballard (1992a) has proposed that the APT probably commenced around 2000 BP. Few attempts, however, have been made to place the AES within a temporal framework (although the c. 3000 BP date for engravings at Vatuluma Posovi are a potential indicator). The initial challenge for Chapter 4 is to establish whether the APT and AES exist in their own right, and if so, whether they express any overlap in terms of their motif ranges and the geographic areas they occupy. Once this has been established, the results will be examined for chronological indicators.