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

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Text

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Vanuatu rock-art through time: a preliminary chronology

7.1 Introduction

If, as appears likely, rock-art in Vanuatu was practised from initial colonisation through to the European contact period, then one might expect a pattern of early homogeneity in the rock-art across the entire archipelago to be replaced by a pattern of increasing regionalism (and therefore heterogeneity). In line with the archaeological evidence, transformations in rock-art may have taken place from either c. 2500 BP at the termination of the Lapita period (Bedford 2000), or c. 1500 BP (Spriggs 1997, Wahome 1997, 1999) when there appears to have been a contraction of inter-island communication networks. The period from 1500 BP and 1000 BP remains something of an enigma for archaeologists but we know from both archaeological and ethnographic evidence that, by around 1000 BP, a network of interaction existed again amongst the northern islands of Vanuatu. We also know that major social changes transpired throughout Vanuatu from around 1000 BP-750 BP as a result of Polynesian influences from the east. Major social changes were then experienced when Europeans visited and later settled in Vanuatu in the last 400 years, and most particularly during the last 200 years. We can expect these episodic changes in the settlement history of Vanuatu to be marked by graphic and other transformations including changes in the rock-art.

Prior to the program of ‘direct’ dating initiated for this dissertation, (direct) evidence for the antiquity of Vanuatu’s rock-art was sparse. Garanger’s (1972) excavations at Feles cave (LP1) on Lelepa yielded a date of around 1000 BP for cultural material lying above a frieze of cupules which had fallen from the cave wall on the adjacent floor deposit. This date does not indicate when the cupules were produced, informing us only on the date at which the cupule frieze was incorporated into the adjacent floor deposit (Spriggs and Mumford 1992). It does, however, provide a maximum age for the painted rock-art on the wall which overlies the scar left from the piece of exfoliated engraved rock (Spriggs and Mumford 1992; and see discussion of rock-art dating for LP1 in Appendix 6.1). The only other evidence for the age of rock-art in Vanuatu derives from depictions of European ships and other cultural material (e.g. clothing) suggesting a post-European contact date (i.e. after 344 BP).
In this chapter a model of the chronology of rock-art transformation for Vanuatu is proposed. A relative sequence is developed from two principal lines of evidence: radiocarbon $^{14}C$ ages of carbon-bearing materials associated with rock-art; and the superimposition of rock-art motifs, techniques, colours and technical classes. Support for this sequence is also inferred from observed parallels between rock-art and decorated archaeological and ethnographic material of known age, such as pottery and barkcloth.

### 7.2 Direct dating

One technique which is currently being used to date rock-art is Accelerator Mass Spectrometry (AMS), a method of radiocarbon dating which involves the measurement of small amounts of $^{14}C$ found in pigments and in rock varnishes which under- or overlie rock-pictures (Ward and Tuniz 2000). The term ‘direct dating’, used in association with this method, is misleading in that the date refers to the death of the organic substances incorporated into the pigment or varnishes rather than the event of rock-art production itself. ‘Direct dating’ therefore provides either a terminus post quem or a terminus ante quem for rock-pictures. For instance, a radiocarbon date on charcoal pigment ‘directly’ dates the death of the organic substance from which the charcoal derived (i.e. the tree), and thus provides a maximum age for a painting event. Likewise, a date from organic carbon overlying an engraving groove provides a minimum age for an engraving event.

As part of this dissertation, funding was secured from the Australian Museum to commence a program of direct dating of the rock-art of Vanuatu. The results of this initial project were published in *Rock Art Research* (Volume 18, No.1, 2001; see Appendix 7.1). A brief summary of the paper is presented below.

A total of 11 AMS radiocarbon dates was obtained from carbon-bearing substances relating to rock-art: charcoal pigment, pollen present within abandoned mud-wasp nests, and insects trapped in the core of mud-wasp nests both underlying and overlying hand stencils. The aim of this preliminary project was not to present a chronology for the art, nor to focus on the age of one motif or another, but to present an initial series of radiocarbon ages relating to items of rock-art of known absolute or relative antiquity in order to evaluate the dating methodology prior to a full dating project. The study was therefore methodological, and designed to assess the suitability of AMS for dating different substances associated with rock-art.

All of the samples which were dated derive from the limestone cave of Hopnarop (MK4) on Malakula. Decorating the side walls and ceiling of this cave are thirty-three black hand
stencils and thirteen black-linear paintings/drawings. A further thirteen images were identified as marks of human origin but were indistinguishable as either black stencils or paintings/drawings. In 1997 I collected samples from seven black (charcoal) hand stencils, two of which were known to have been produced between 1996 and 1997 (Hop19 and Hop20). It was agreed in collaboration with the local community that, for this initial dating project, we would only collect rock-art if it was already partially flaking off the walls or if the paint was sufficiently thick that its removal would not expose the underlying rock surface. The selected pictures needed to yield sufficient carbon for AMS dating to increase the reliability of the results. Preference was also given to pictures which occurred in superimposition with mud-wasp nests, themselves capable of being AMS-dated (Roberts et al. 1997). A total of three nests and five (of the seven) hand stencil samples were subjected to AMS radiocarbon dating (Figure 7.1). The nest sampled as Hop15 was specifically selected so as to test the integrity of the internal stratigraphy of the nest and superimposed charcoal pigment (Hop 19). The nest had patches of charcoal pigment on its external surface which meant that a minimum age for the hand stencil could be obtained. Pollen and an insect from the inner and outer portion of Hop15 were selected for dating. The charcoal sample from Hop19 was divided and submitted to the Australian Nuclear Science and Technology Organisation (ANSTO) for dating as two separate samples, providing an internal check of the results.

The results (Figure 7.2) show that all of the nests and charcoal pigments are modern (i.e. dating to within the last 200-300 years). The radiocarbon determinations in all cases accord with the relative stratigraphic positioning of the samples. They are also consistent with the following expectations:

1. The percentage of modern carbon in the two paint samples deriving from the hand stencils produced between 1996 and 1997 (Hop19 and Hop20) indicate a post-bomb date (i.e. after 1950).

2. The two samples taken from hand stencils known to have been produced before 1996-7 (Hop22 and Hop24) have substantially less modern carbon than Hop19 and Hop20 and were most likely produced within the last 200-300 years. They show no trace of the bomb pulse and were therefore produced before 1950.

3. Consistent with the observed sequences of superimposition, the mud-wasp nest and associated insect (Hop15) contained less modern carbon than the overlying hand stencil (Hop19A and B).
4. Likewise, the charcoal from hand stencils Hop22 and Hop24 contained less modern carbon than the overlying nests (Hop3 and Hop6).

5. Hop19, which was submitted for dating in two parts, yielded statistically similar dates, indicating the internal consistency of results produced by ANSTO.

6. The radiocarbon dates on the hand stencils at Hopnarop are similar to an AMS date previously obtained by Matthew Spriggs on charcoal from a black hand stencil from the cave site of Velemendi (ER2) on Erromango: 140±45BP (calib. 288-0 BP) (OXC 828) (Bedford et al. 1998).

The European contact age of the rock-art dated at Hopnarop provides evidence that the most common motif type in Vanuatu, the black hand stencil, was being produced between the arrival of the first European explorers and 1950; at a time when Vanuatu communities were experiencing major cultural and social transformations. This result is curious, however, given that black hand stencils in superimposition almost invariably underlie black linear painted motifs (see below). Does this mean that the majority of the black linear rock-art was also produced within the European contact era? Or are hand stencils at Hopnarop atypically recent? These questions are addressed over the course of this chapter.

In 2000, a Large ARC grant was awarded to a team of archaeologists and dating experts to conduct a rock-art dating program in Vanuatu. The results obtained thus far are presented in Figure 7.3. 38

Various conclusions can be drawn from these results:

1. All of the black hand stencils listed in Figure 7.3 derive from Yalo (on Malakula) and Valnatamat (on Lelepa). Apart from Yalo(9) (OZE561) – a back-to-back hand stencil which returned an age of 261 ± 42 BP – all other hand stencils in the sample exceed the age of those at Hopnarop.

2. Black hand stencils on Malakula were probably being produced from 2308 ± 2177 to 2131 BP through to the European contact period. The gap of around 1400 years between the production of Yalo(17) and Yalo(23) indicates a possible lapse in the production of black hand stencils at Yalo, but not in the production of rock-art at this site generally (see below).

38 The 'Vanuatu Rock Art Dating Project' was initiated outside the framework of this thesis but permission to present the results in Figure 7.3 was provided by the project coordinator, Dr. Bruno David (Monash University).
3. The 261 [42] 0 BP date for the back-to-back hand stencil at Yalo suggests a relatively recent introduction of variants of hand stencils on Malakula.

4. Two other stencil motifs on Malakula yielded statistically similar ages of 1330 [1290] 1260 BP and 1296 [1284] 1190 BP. Both of these motifs derive from the same chamber in the cave site of Yalo (MK3). One is a stencil of a ‘fish’, and the other is a straight-line stencil which has been interpreted locally as a ‘walking stick’. The dates for these figures fall into the timeframe in which there are no dates available on black hand stencils (i.e. between 2308 [2177] 2131 BP and 914 [719] 652 BP). Based on these dates it is possible that stencilling of fish and other forms replaced an earlier emphasis on hand stencil production on Malakula, with hand stencils being re-introduced after around 1000 years ago.

5. The oldest black linear motif derives from the inland cave site of Pitah Funtah (MK18) on Malakula. The motif is located on a relatively old limestone surface which is experiencing rapid exfoliation. Surfaces such as this are rare in Malakula, suggesting that some of the oldest rock-art on the island may have been lost. The 2308 [2043] 1885 BP age of this motif is important because it demonstrates that at least some black linear rock-art was being produced in Malakula at around the same time as the black hand stencils at Yalo.

6. Overall, black stencilling is a more ancient form of rock-art in Vanuatu than black linear. Apart from the Pitah Funtah motif, all other black linear motifs on Malakula were produced within the last 1000 years. Two simple black linear motifs (APO26 and APO24) yielded almost identical ranges of 932 [916] 790 BP and 931 [916] 791 BP. One of these (APO24) overlies an amorphous-shaped red linear motif, providing the only minimum age for red linear rock-art available thus far.

7. The three radiocarbon dates on rock-art from Valnatamat (LP2) on Lelepa Island support the overall sequence of dates on Malakula. The black hand stencil (Valnatamat HS1) was produced around 2000 years ago and the two black linear figures were produced within the last 650 years.

In the following section patterns of superimposition are analysed for each site and island region and then, in conjunction with a consideration of the direct dates presented above, a model of rock-art change is proposed for the archipelago as a whole. The limitation of relying on superimposition alone as a means of identifying rock-art change derives from its inability to distinguish whether two motifs in superimposition were created within the same artistic event or many hundreds or even thousands of years apart. As I seek to demonstrate,
it is only when considered in conjunction with the radiocarbon dates presented above that more reliable and detailed chronological patterns of rock-art transformation can be identified.

The frequent cases of superimposition in Vanuatu, coupled with the observation that certain types of motifs and technical classes (e.g. hand stencils) are regularly superimposed by others belonging to a different motif type and technical class (e.g. black linear central line motif), indicate that certain individual predilections and social imperatives probably governed the patterns of superimposition observed today. These may have ranged from an individual’s desire to mimic earlier art (which may explain the ‘smiling faces’ at Apialo B [MK16]), to a community’s will to stake their claim at particular places by over-writing the graphic signatures belonging to a previous group. However, an exploration of the intentional and unintentional behaviours underpinning the relative distributions of Vanuatu’s rock-art fall beyond the parameters of this thesis. The aim at this stage is to develop a framework for understanding rock-art transformations through time. Once this has been achieved, a more thorough and accurate investigation of the myriad social processes which inevitably motivated these transformations can be undertaken.

7.3 Relative dating

One means of determining the relative age of rock-art is to examine cases of superimposition. During my fieldwork on Maewo, Malakula, Lelepa and Erromango, a total of 264 cases of superimposition were recorded. This includes the total number of cases in which a pair of motifs occur in superimposition. For instance, where more than two motifs occur in superimposition (e.g. a ‘red solid’ motif – superimposed by a ‘black stencil’ – superimposed by a ‘black linear’ motif), three separate levels of superimposition are present:

1. the black stencil superimposes the red solid
2. the black linear superimposes the red solid
3. the black linear superimposes the black stencil

The total number of cases of superimposition recorded for each island is presented in Figure 7.4. Patterns of superimposition were not recorded for the island of Aneityum (Spriggs and Mumford 1992; M. Spriggs, pers. comm. 2001).

The tables accompanying this section list the recorded cases of superimposition for each island region under three columns. The first column identifies the superimposed motifs, and the second column the superimposing motifs. The last column provides details of site
provenance and indicates whether an engraving groove has been infilled with pigment. Each painted motif listed in the data tables has been accorded codes for both colour and ‘technical class’. The ‘technical class’ codes are listed in Figure 7.5. Based on this system, a black pigment hand stencil is referred to as Black1; a red linear oval (without any solid pigment infill) is referred to as Red4, and so on.

7.3.1 Maewo

As shown in Figure 7.6, most cases of superimposition on Maewo involve engraved rock-art. As noted previously, it is often difficult to identify the type of engraving technique an artist used due to the various natural processes that have affected the preservation of engravings over time. Engravings with deep, rounded, ‘U’-shaped grooves were probably produced using a technique of pecking and abrasion, while those with shallow, ‘V’-shaped grooves were probably produced by incision. In the following discussion engravings are generally described in terms of groove dimensions. When I use the term ‘abrasion’ or ‘incision’ I assume that these techniques have been used to produce the groove dimensions observed. It will become evident over the course of this discussion that particular groove dimensions are associated with specific motif types.

On Maewo, there are clear intersite differences between the motifs present and the texture and dimensions of engravings. For instance, at Malangauliuli (MW5), a shelter comprised of highly friable (and presumably easily carved) limestone, most of the engravings consist of grooves of considerable depth and width. Four examples of superimposition were recorded at this site (Figure 7.6). Three of the superimposed motifs are large single circular depressions, or cupules (CP1). These are overlain by a row of cupules (CP7), a fish/leaf-shaped motif, and an image resembling a European-style ship. The relief circle is also superimposed by a European ship. The fourth superimposed motif is a relief circular shape (Cn59) with a large central depression. While there are few cases of superimposition at Malangauliuli, non-figurative large circular depressions and circular relief forms are probably among the earliest motifs produced at the site. The cupule row which superimposes one of the large circular depressions extends for many metres horizontally along the rock-shelter and is a later addition. The ‘fish’ and the European ships suggest a more recent introduction of figurative forms at the site.39

At the two volcanic boulder sites on Maewo – Huti and Siligi (MW1 and MW2) – engravings tend to be much shallower and smaller than at Malangauliuli (MW5). Their shallow depth may be due either to the hardness of the rock (making the engraving process
more difficult and time-consuming) or to weathering due to exposure. The engraved volcanic surfaces on Maewo are also much smoother and more fine-grained than the limestone surfaces and therefore more amenable to the production of fine-lined engravings. The small size of individual pictures is almost certainly a function of the limited size of the rock surface area.

Both the Huti and Siligi sites display a combination of fine-lined engravings which appear to have been produced by single stroke knife incisions, and engravings with wider and deeper grooves which were probably engineered using an abrasive motion. In all cases, the former superimpose the latter. At Huti the rock-art is mostly rectilinear and consists of many sharp, angular lines. In contrast, the earlier motifs at Siligi are distinct from the later ones in terms of form, structure and technique. The sequence of relative superimposition indicates that curvilinear and deeply grooved enveloped crosses were manufactured prior to the more rectilinear fine-lined incised motifs (such as zigzags, diamonds and straight lines).

The only other site on Maewo where superimposition is found is at the cave site of Malangatavarsoso (MW6). Two examples have been recorded. One involves a white diamond design superimposed by white modern writing. The other consists of a circular depression superimposed by black pigment infill. Due to the small number of examples of superimposition at this site little can be said about changes in motifs and rock-art techniques.

One of the questions raised by the superimposition evidence on Maewo is whether cave/shelter art and boulder art was practiced contemporaneously? This question is reconsidered in Chapter 8 where I situate the temporal evidence for Vanuatu’s rock-art within a broader historical context. Figure 7.7 shows the relative chronological relationships of motif techniques and styles on Maewo. This diagram is modelled loosely on the Harris matrix approach to archaeological stratigraphy (Harris 1979). Contemporaneity is not implied between the techniques which appear on the same horizontal axis. The diagram should be read vertically, from ‘early’ at the top to ‘late’ at the bottom. Older techniques/styles are thus positioned above younger techniques/styles in a relative chronological sequence.

As stated earlier, the engravings in the first column of Figure 7.6 underlie those in the second column. Most of the engravings in the first column were probably produced using a technique of abrasion, while most of those in the second column were probably produced by incision (apart from ‘cupules’, for example). The Black2 motif listed in Figure 7.7 is shown

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39 For more information about the interpretation of rock-art chronology at this site see Appendix 6.1.
superimposing an abraded motif. While only a single example of this superimposition relationship has been found on Maewo, it suggests that pigment supersedes abrasion in the sequence of rock-art production on the island. The chronological relationship between incision and black pigment remains unclear. Likewise, due to a lack of superimposition evidence there is no way of assessing the chronological relationship between white pigment rock-art, black pigment rock-art and engravings. Given that white is the main colour used at MW6 to produce European ships and modern writing, however, a recent antiquity for white pigment on Maewo is implied (within the last 400 years). Maewo is the only island in Vanuatu where white pigment has been used on its own to produce rock-art.

7.3.2 Malakula

Figure 7.8 presents the 123 cases of superimposition found on Malakula. The evidence for superimposition within the rock-art of Malakula indicates that red pigment precedes black pigment. It is difficult to define the chronological relationship between red paintings and engravings due to a lack of superimposition evidence, apart from the few examples of cupules which clearly supercede red rock-art. As shown in Figure 7.8 a red hand stencil at MK3 is superimposed by several configurations of cupules and a black hand stencil. At both MK3 and MK13 several patches of solid red pigment (Red2) are superimposed by Black1 (hand stencils), Black3 (anthropomorph), Black4 (one circle, one central line, one complex rectilinear) and several amorphous shaped (SA) motifs. At MK15 an amorphous red linear motif (Red4) is superimposed by a Black4 (central line) motif. There are no instances in Northwest Malakula of red pigment rock-art superimposing black pigment or engraved rock-art.40

Black hand stencils appear to replace red hand stencils and other red forms in the sequence of rock-art production on Malakula. This observation is supported by one of the primary custodians of Yalo (MK3) on Malakula who was informed by his father that red rock-art preceded black rock-art at this site (Pita Dan Senembe, pers. comm. 1999). In more recent contexts on Malakula, however, such as in ceremonial dancing, red and black pigment have been used together, often covering either side of the face (Deacon 1934: 282). A total of 69 black hand stencils are superimposed by engravings (various formations of cupules), Black3 motifs (figurative forms including fish and anthropomorphs), and an extensive range of figurative and non-figurative Black4 motifs (including fish, anthropomorphs, faces, straight lines, a central line, diamonds, circles and several amorphous shapes). There is one example

40 There is one example of a red substance superimposing a row of cupules at Yalo (MK3) but, according to geochemist Alan Watchman (pers. comm. 2000), this red substance is most likely a
of a Black1 (hand stencil) motif superimposing an engraving (CP7). Since black hand stencils both precede and supersede cupules, neither category can be regarded as temporally exclusive. However, given that there is only one instance of a cupule form underlying a black hand stencil, but there are nineteen cases of cupule forms overlying black hand stencils, it would seem likely that cupules generally post-date the production of black hand stencils on Malakula.

Black hand stencils superimpose cupules but no other engraved motif. This presents a problem in terms of defining a relative chronology for the engraved rock-art of Vanuatu because cupules represent such a small proportion of the engraved motif range in Northwest Malakula. One of the reasons why cupules are more likely than other engravings to be involved in contexts of superimposition is because they often occur in long rows which extend over wide areas of accessible surface.

It is likely that black hand stencils were extensively produced prior to the production of black linear (Black4) motifs in Northwest Malakula. There are no examples of black linear (Black3 and Black4) or black solid (Black2) forms superimposed by black hand stencils or other Black1 (stencil) motifs. However, the modern radiocarbon dates on rock-art from Hopnarop indicate that while the production of black hand stencils probably preceded the production of most black linear forms, black hand stencils continued to be produced into the European contact era.

Black2 (a teardrop) and Black4 (a straight line and leaf-shaped) motifs superimpose an engraved teardrop (MK16), a set of cupules (MK13) and an engraved face motif (MK15). Engraved cupule formations superimpose two Black3 anthropomorphic forms and an amorphous Black 4 motif. At Apialo (MK15), a Black4 circular motif (Cb6) superimposes a unique engraved face. At the same site a row of cupules superimposes a Black-and-White3 anthropomorph. Importantly, the cupule is the only engraving category which superimposes painted forms in Malakula.

There are several examples of black pigment rock-pictures (excluding stencils) engaged in superimposition. The most common scenario is Black4 motifs superimposing other Black4 motifs, indicative of the large number of pictures assigned to the Black4 category. There are five examples of Black4 motifs superimposed by Black3 motifs. Apart from two amorphous Black3 shapes, all of the Black3 motifs engaged in superimposition are figurative

naturally occurring mineral within the rock-surface. A sample of this red substance was collected by Watchman in 2000 and its elemental composition is currently being examined.
(anthropomorphs), and all of the Black4 forms which underlie them are exclusively non-
figurative. As well as a transformation in the use of certain painting styles (i.e. Black 4 to
Black3), there may have been a concomitant shift in the choice of subject matter from non-
figurative to figurative forms. The relative superimposition of rock-art in Northwest
Malakula is presented in Figure 7.9.

7.3.3 Lelepa

Figure 7.10 presents the 29 cases of superimposition recorded on Lelepa. As on Malakula,
painted rock-art using red pigment is always superimposed on Lelepa by engraved and black
painted rock-art. There are no examples of Black1 rock-art in superimposition with other
techniques. We know from the direct dates presented earlier, however, that a Black1 hand
stencil at Valanamatamat (LP2) is older than two Black4 non-figurative motifs.

Black rock-art and engravings on Lelepa superimpose each other. A number of cupule
formations and other engravings (arcs, semi-circles, a circle, egg-shaped, straight-line and
anthropomorphic motif) are infilled with Black2 and Black4 forms. Whether or not the
pigment infill was added to the engravings during a single artistic event or later is impossible
to determine. A Black3 motif resembling fish motifs on Malakula is superimposed by a row
of cupules. Three figurative and non-figurative Black4 motifs (a face, a diamond and a
straight-line) are also superimposed by cupule formations (CP9). As on Malakula, the only
engravings superimposing black paintings are cupules.

While cupules clearly overlap black pigment rock-art on Lelepa, little can be said about the
relative chronology of other engraved motifs at the site, except that some are infilled with
black pigment. Several Black2 diamond shaped motifs (resembling birds) are superimposed
by Black3 anthropomorphic and bird-shaped motifs. On Malakula it was difficult to situate
Black2 rock-art within a framework of relative chronology because they are rarely engaged
in superimposition with other techniques/styles. On Lelepa however, Black2 motifs are
never superimposed by other black pigment techniques. As on Malakula, figurative Black3
forms on Lelepa tend to occur later in the relative sequence. Figurative motifs also occur
late in the engraving sequence on Maewo. The relative chronology for the rock-art of Lelepa
is illustrated in Figure 7.11.

7.3.4 Erromango

Figure 7.12 presents the 96 cases of superimposition recorded on Erromango. The
superimposition relationships on Erromango are slightly different to those from both Lelepa
and Malakula. On Erromango, red rock-art occurs throughout the sequence rather than
exclusively at the beginning. While there are 39 cases of black-on-red, indicating that this is the dominant pattern, there are four cases of red-on-black. Ethnographic records indicate that Erromango was engaged in a red ochre trade with other southern islands, which may account for its continued use in the production of cave art until relatively recently (Robertson 1902: 9).

As on Malakula and Lelepa, examples of red rock-art on Erromango are superimposed by other technical classes. For instance Red1 motifs (stencils) are superimposed by engraved cupules (CP7), black hand stencils, and Black4 motifs (non-figurative circles, zigzags and diamonds). Red2 motifs are superimposed by black hand stencils and Black4 motifs (e.g. non-figurative straight-line, central-line, quadrilateral and diamond-shaped motifs). Red4 motifs are superimposed by Black1 and Black4 motifs. The 39 cases in which red rock-art is superimposed by other technical classes suggests it constitutes the earliest component of Erromango’s rock-art. There are four cases of red paintings superimposing black paintings. At the cave site of Velemendi (ER2) on Erromango’s west coast, a Red4 circular motif superimposes a black hand stencil, and a Red1 hand stencil superimposes a Black4 wavy-line motif. At Potnangai (ER6), a cave on Erromango’s south coast, an amorphous Red4 linear motif superimposes a Black1 hand, and a Red4 oval-shaped motif superimposes a Black4 leaf-shaped motif.

Red2 rock-art never superimposes other technical classes. The most common motif in the Red2 category is an amorphous solid shape (SA), often found at unreachable heights on cave surfaces. The colouring of the Red1 hand stencil at Velemendi, which is superimposed by a Black4 wavy-line, does not resemble other red stencils at the site. There are two possible reasons for this. It may have been produced relatively recently and has therefore not had the time to fade to the colour of other hand stencils at the site, and/or the ochre used in its production may have derived from a different source to the ochre used to produce other red rock-art at the site (also implying that it may have been produced at a different time).

The only category of red rock-art which appears to have continued into the period when black rock-art was more commonly produced is Red4, which includes red linear motifs. At Potvelia 2 (ER14), a shelter in southern Erromango, the presence of bichrome red and black motifs supports the idea that red and black linear art was produced contemporaneously.

There are 25 examples of Black1 motifs superimposing other Black1 motifs. At Velemendi (ER2), six circular stencils which possibly represent navela (see Chapter 6, and Spriggs and Mumford 1992: 130) superimpose black hand stencils. There are a large number of Black4
linear motifs superimposing Black1 hands \((n=20)\). Only one faded Black4 linear motif is superimposed by a Black1 hand. As on Malakula, Black1 hands appear to constitute a relatively early component of Erromango’s rock-art sequence. Black1 hands rarely overlap with Black4 motifs which are probably a more recent addition to the rock-art assemblages of Erromango. There are four cases of Black4 motifs superimposing other Black4 motifs but there is no indication of an evolution of forms. On the contrary, over the time period in which Black4 motifs were produced the motif range remained homogeneous.

There are only three examples of engravings superimposing other engravings, each of which are found at the shelter site of Ilpin (ER5). As on Maewo and Malakula, forms with deep, U-shaped grooves are superimposed by shallower V-shaped forms. It is probable that one is an axe-grinding groove superimposed by a shallow incised line. The other two cases of superimposition involve cupules. One is superimposed by a motif resembling a European ship, and the other by a plain cross. The relative chronology for the rock-art of Erromango is illustrated in Figure 7.13.

### 7.4 Discussion: space, time and motifs

In Chapter 6 it was demonstrated that rock-art techniques and motifs are differently distributed through space. In this chapter it has been shown that the rock-art of Vanuatu varies through time. The following summary combines this spatial and temporal evidence, laying the foundations for a model of rock-art transformation for Vanuatu, presented in Chapter 8.

Figure 7.14 isolates those motifs which have either a Vanuatu-wide, regional, or local distribution and which occur in superimposition. The following motifs are excluded from the diagram:

1. Superimpositions which involve an engraving infilled with pigment: in such cases it is uncertain whether the infill was added in the same event as the underlying engraving.

2. Superimpositions involving modern writing: these invariably overlie other motif types and are already known to be of post-European contact age – which refers to the last 150 years, since missionaries arrived in Vanuatu and introduced written language (Spriggs 1985).

3. Complex figures: these have not been assigned individual motif codes and would therefore have no bearing on the patterns in Figure 7.14.
4. Faded figures (except where they occur in red): there are large numbers of faded black paintings which have not been assigned individual motif codes. Like complex figures, they would have no bearing on the patterns in Figure 7.14.

5. Amorphous shapes (if they occur in superimposition with a motif of the same technique): these have an indeterminate and unique form and are therefore not useful in the development of relative chronologies.

6. Motifs of the same form and technical class which are in superimposition (e.g. a Black1 hand superimposing a Black1 hand): these cases of superimposition would be useful in terms of ‘direct’ dating to determine the temporal range for single motifs, but are of no use for the purpose of determining how Vanuatu’s rock-art changes in terms of form and technical class.

Each of the superimpositions represented in Figure 7.14 (a-d) is listed in one of the tables presented in the previous section. Most of the motifs represented are found across Vanuatu and are indicated by the letter ‘v’. Where two motifs are linked by a line the lower motif superimposes the upper motif. For example, CLd5 (Black4) superimposes a Hand (Black1), and Cm49 (Black4) superimposes CLd5 (Black4). The relationships of superimposition exist exclusively between pairs of motifs linked in this way by lines. In other words, while Cm49 (Black4) always superimposes CLd5 (Black4), it has never been found superimposing Hand (Black1). Its chronological position in relation to Hand (Black1) is based on the intervening motif (CLd5). The chronological relationship between Cm49 (Black4) and Hand (Black1) is thus inferred through their relationship with the intermediate CLd5 (Black4), rather than demonstrated. The following 12 statements derive from the motif relationships observed in Figure 7.14.

1. The various technical classes of red rock-art almost always underlie all other types of rock-art in Vanuatu. Two exceptions include STd13 (Black4) which underlies a Hand (Red1), and Ou29 (Red4) which overlies a leaf-shaped motif (Lg3; Black4). Both of these examples derive from Erromango, the only island in Vanuatu presenting an anomalous sequence of rock-art transformation. As noted above, while red motifs always precede other technical classes on Malakula and Lelepa, a small number of Red4 linear motifs occur later in the sequence on Erromango. Red4 linear motifs bear a significant resemblance to motifs diagnostic of the Black4 motif category which appear to have been produced after the majority of Red1 and Red2 rock-art in Vanuatu (see below).
2. The two earliest forms of red rock-art in Vanuatu are hand stencils (Red1) and amorphous-shaped (SA) solid pigment motifs (Red2). Both tend to be situated at inaccessible heights (more than 2-3m) within limestone caves and in close spatial proximity to human skeletal material, particularly on Erromango (e.g. Velemendi [ER2], Raoviu [ER18]). Apart from the exceptions already mentioned, Red1 and Red2 motifs never superimpose other technical classes. It is therefore probable that they were produced within a relatively short time period coinciding with the initial settlement of Vanuatu, and were eventually replaced by other types of rock-art.

3. The CPI engravings from Maewo are the only engravings in Vanuatu which may be contemporaneous with or older than red rock-art. These large circular depressions manifest structural qualities found within the Vanuatu-wide engraving class described at the conclusion of Chapter 6. CPI motifs are superimposed by two European ships and a fish motif (Fish16). The fish motif has a leaf-shaped structure characteristic of much of the Black4 linear rock-art which occurs relatively late in Vanuatu's rock-art production sequence (see below).

4. It remains extremely difficult to situate Vanuatu’s curvilinear engraved rock-art within a sequence of relative chronology. No motifs have been ‘directly dated’ and none (apart from Xd3 and cupules) occurs in superposition with other rock-art forms. However, several factors suggest that the traits denoting this engraving group (simplicity, curvilinearity, central cupules) are earlier than motifs characterised by rectilinearity and complexity (e.g. CPI, a simple curvilinear motif, is superimposed by Fish16, a complex rectilinear motif). In addition, three engraved motifs are found exclusively in the north of the archipelago: enveloped crosses (vX57, Xn22), a face motif (Face8/EGf4), and a complex quadrilateral form (vQ25). Each are defined by relatively deep grooved engravings (abraded) and are superimposed by shallow (incised) straight-lined engravings (STd12). Motif STd12 is commonly represented in the painted Black4 category which occurs relatively late in Vanuatu’s rock-art production sequence (see below). By implication, incised engraved and Black4 painted motifs probably post-date deeply abraded engraved motifs.

5. Both enveloped crosses (vX57, Xn22) and Face8/EGf4 motifs have a curvilinear quality, with the latter also being characterised by central cupules. Such traits are diagnostic of the Vanuatu-wide engraving group. Enveloped crosses and Face8 motifs are possibly a northern variant of this widely distributed and homogeneous engraving class.

6. The engraved quadrilateral (vQ25) from Maewo is more similar to some of the rectilinear painted rock-art seen on other islands, such as vQ37 (Black 4) which
superimposes SA (Red 2) (see Figure 7.14). In comparison, vQ25 was probably produced after most of Vanuatu's red rock-art and is most likely contemporaneous with Black4 rock-art.

7. It was noted in Chapter 7 that there is a clinal distribution of techniques in the north-central region. Many of the painted/engraved motifs (which are mostly rectilinear) have a higher representation of engravings on Maewo and a higher representation of paintings on Lelepa. Malakula has relatively even numbers of both engravings and paintings.

8. Rectilinear rock-art was probably introduced late in the sequence of rock-art production in Vanuatu. It was practiced most frequently in the engraved rock-art on Maewo where it is characterised largely by fine-lined (incised) forms, and increasingly frequently in painted rock-art on Malakula and Lelepa.

9. Cupule configurations (other than the large CP1 motif on Maewo) occur after Red1 and Red2 rock-art and both before and after Black1 hand stencils. It is likely that cupules (like black hand stencils) were produced over a relatively protracted time period after Red1 and Red2 rock-art forms dropped out of the sequence.

10. On current evidence, black hand stencils began to be produced after Red1 and Red2 rock-art had ceased to be produced and engraved curvilinear rock-art (including cupules) had already commenced. Black hand stencils, which range in age from 2308 [2177] 2131 BP to the present, invariably superimpose Red1 and Red2 forms. It is likely that Red1 and Red2 rock-art was produced prior to this time and was then directly replaced by a similarly limited range of black-pigment forms (i.e. black hand stencils).

11. Always overlying black hand stencils are a range of rectilinear forms belonging mostly to the Black4 painting category (and less frequently to the incised engraving category). The most common motifs represented are rectilinear, including central-lines, straight-lines, triangles, and diamonds. Each of these motifs is common to the Vanuatu-wide painting class described at the conclusion of Chapter 6. Even the curvilinear motif categories which overlie black hand stencils have rectilinear components, such as vO42 (an oval with internal bars and stripes), Ci43 (a circle with central spokes), and C128 (a circle with complex rectilinear infill and appendages). Other than a single motif from Malakula which has yielded a radiocarbon age of 2308 [2043] 1885 BP, most Black4 rock-art in Vanuatu appears to have been produced within the last 1000 years.

12. There is some evidence that Black3 motifs were introduced after Black4 and Black2 forms and at a time when figurative paintings and engravings became a more common feature of rock-art assemblages throughout Vanuatu. Figurative motifs, particularly
incised and painted anthropomorphs, commonly superimpose non-figurative rock-art on each of the islands.

7.5 Conclusion

In this chapter both ‘direct’ and ‘indirect’ dating methods have been used to facilitate the development of a model of rock-art change for Vanuatu. In almost all cases, the results deriving from the two methods have been shown to correspond with each other. The only curious findings include:

1. The relatively recent ages of the black hand stencils at Hopnarop [MK4] (Malakula). In sequences of superimposition for each region of rock-art, black hand stencils almost invariably underlie Black4 rock-art (with one exception from MK9 – Elnisi). Given that most of the Black4 dates to within the last 1000 years, most black hand stencils might be expected to predate this period. However, in light of the radiocarbon dates on certain black hand stencils from Yalo (e.g. 515 [505] 471 BP and 472 [356] 314 BP), Hopnarop, and Velemendi [ER2] (288-0 BP), there appears to have been a re-emergence of hand stenciling within the last 1000 years. The pattern emerging for Vanuatu is one in which a tradition of hand stencils occurred at around 2000 years ago or earlier (e.g. at Yalo [MK3] and Valnatamat [LP2]) and then re-emerged within the last 1000 years (at Yalo, Hopnarop and Velemendi). It is the intervening period for which direct dates are missing (particularly in Northwest Malakula), although this may well be a sampling problem. The more recent phase of direct dating in Vanuatu (e.g. Figure 7.3) has deliberately targeted black hand stencils which underlie paintings of other styles, which may explain why the dates cluster at either end of a 2000 year spectrum.

2. While both the direct and indirect forms of dating evidence presented in this chapter suggest that Black4 is among the most recent rock-art in the region (produced largely within the last 1000 years), one Black4 motif from Pitah Funtah (Figure 7.3) has yielded a date of 2308 [2043] 1885 BP. There are several possible explanations for this apparent ‘anomaly’. Firstly, given that we now have an adequate number of direct dates on Black4 (and Black3) rock-art to suggest that the Pitah Funtah motif is unusually old, the pigment sample may well have been contaminated with old organic carbon. Rather than simply accepting this date as the upper age limit for black linear rock-art, it may be worthwhile re-sampling this motif for another date. The second possible explanation, which I believe to be more plausible, is that a certain amount of black linear rock-art was being produced around 2000 years ago but has since been lost through taphonomic processes occurring on rock-surfaces. Most of the black linear rock-art at Pitah Funtah
(and other sites in Vanuatu) is located on relatively fresh surfaces. The c. 2000 year old motif from this site, however, is located on an older remnant surface which has not yet succumbed to processes of exfoliation (unlike most of the surfaces in the cave). For this second explanation to be plausible, however, the presence of black hand stencils which have been dated to the same period needs to be accounted for. In response I would suggest that either (a) hand stencils were produced more prolifically during this early period and/or (b) hand stencils, which are constituted by a larger pigment mass than black linear rock-art, are more easily recognisable (even if they are old) because they preserve more readily than black linear rock-art.

Each of these explanations is re-examined in Chapter 8 where the spatial and temporal patterns of Vanuatu’s rock-art are situated within an historical context, exploring in particular possible links between cultural transformations observed archaeologically and those identified in the rock-art. In this way, some of the more perplexing and currently atemporal features of Vanuatu’s rock-art (e.g. engraved rock-art which has so far not been directly dated and for which there is little evidence of superimposition) are examined in relation to other cultural data (e.g. changes in settlement patterns over time) for clues as to their possible age and the cultural context in which they were produced.
Towards a model of rock-art transformation for Vanuatu

8.1 Introduction

The geographical units employed thus far in my analyses of the rock-art of Vanuatu – Vanuatu-wide, regional and island-specific – are intended to serve as heuristic devices only. Clearly, however, rock-art did not transform in ways which reflect these arbitrary divisions. As with other forms of material culture, similarities and differences in the rock-art of Vanuatu overlap in a non-uniform way. In this chapter the results of the previous two chapters are revisited in order to generate a model of rock-art transformation for Vanuatu. In doing so I also take account of some of the more subtle geographical and temporal variations not brought out in the analyses presented thus far which speak of the complexity of inter-societal influences throughout the archipelago and beyond. The rock-art evidence is synthesised with current archaeological, ethnographic and linguistic data to determine the extent of the similarities and differences between the findings from the different disciplines.

Towards the end of this chapter a series of statistical analyses is conducted in order to situate the rock-art of Vanuatu within a western Pacific context. The implications of these analyses are evaluated in Chapter 9, where a model of rock-art transformation for the wider western Pacific region is proposed.

8.2 Engravings and paintings

As the results presented in Chapters 6 and 7 suggest an overwhelming degree of complexity in terms of the nature of contact amongst different societies within Vanuatu, it would be impossible to comment on each and every pattern of interest. The aim of this discussion, therefore, is to elicit those patterns which are most informative of broad-scale socio-historical changes within Vanuatu, which can eventually be used to throw light on the patterns of rock-art observed at an western Pacific scale. Broad spatial and temporal distinctions are evident in the rock-art of Vanuatu on the basis of technique (i.e. painting versus engraving) but with some significant overlaps. Based on the results of the previous two chapters, it now may be appropriate to conceive of certain repertoires of rock-art in Vanuatu as 'traditions'. As defined in Chapter 1, rock-art traditions are constituted by repertoires of rock-art which are related in time and space. As I seek to demonstrate here, though there are degrees of temporal and spatial overlap between some of Vanuatu's rock-art
traditions, each is sufficiently cohesive to be treated independently. The following discussion highlights the distinctive components of four ‘traditions’ of rock-art:

1. a Vanuatu-wide engraving tradition which coincides with the Lapita period;
2. a Vanuatu-wide Red1/Red2 painting tradition, probably also of Lapita age;
3. a Black1 stenciling tradition which is roughly coterminous with the Mangaasi period;
4. a Rectilinear painted and engraved tradition of the last 1000 years.

8.3 A (Lapita period) engraving tradition (Vanuatu-wide)

This tradition does not encompass all of the engraved rock-art of Vanuatu. Those motif categories which are included tend to be curvilinear in structure, or to contain motifs which include elements such as cupules (Figures 6.27 and 6.28) (Plate 11). The tradition is represented by both figurative and non-figurative motifs, the face being the most prominent figurative category. Faces with circular, oval and teardrop shaped heads feature strongly, with Face9 (Figure 6.27), characterised by two cupules joined by a single arched line (an ‘eye-and-nose’ combination), proving remarkably similar to faces recorded on Early and Middle Lapita ceramics throughout Island Melanesia (see for example the ‘Type2’ Lapita face described by Spriggs 1990b; also known as the ‘single-face’; e.g. Kirch 2000) (Plate 12).

While some of the more diagnostic decorative features of Early to Middle Lapita decorated ceramics, such as the presence of faces (eye-and-nose combinations) and curvilinear non-figurative motifs, correspond to key features of this Vanuatu-wide engraving tradition, some of the more obvious parallels between Lapita decorated pottery and Vanuatu’s engraving tradition are those which relate to deeper structural features. Both the ceramics and the engravings exhibit (a) a restricted range of motifs; (b) a definable set of rules associated with production (see section 8.4 for a brief summary of the structural rules associated with early rock-art in Vanuatu); and (c) distribution over a wide geographic area. Based on these parallels I tentatively propose that the emergence of this engraving tradition in Vanuatu coincided with the earliest movements of colonists into Vanuatu during the Lapita period. In support of this proposition I refer to a theoretical position advanced by Kirch (1997: 130; and see Chapter 1) for differentiating between motif repertoires which emerge as a result of ‘borrowing or diffusion’ as opposed to ‘ancestral connections’. Kirch argued that Lapita dentate-stamped ceramics express the features of a coherent ‘culturally-encoded artistic system’. From this he inferred that the Lapita graphic system does not offer evidence for the borrowing or diffusion of production techniques or motifs. For these processes to have occurred, he argued, we should be able to detect individual design elements from the Lapita
repertoire being ‘recombined in new patterns or structural codes’. Instead, he observed that the entire Lapita design system, together with its structural codes, ‘is replicated from site to site’ and is thus indicative of shared origins (Kirch 1997).

A similar argument could feasibly be extended to explain the Vanuatu-wide engraving tradition illustrated in Figures 6.27 and 6.28. Colonising groups may not have benefited during the early settlement period from immediately differentiating themselves from their island neighbours, electing instead to reproduce in a wholesale fashion the graphic vocabularies which linked them to their forebears.

The distribution of motifs belonging to this engraving tradition at only a small number of rock-art sites from the north to the south of the archipelago attests to the short life-span of the Lapita Cultural Complex in Vanuatu (in the order of 200-300 years; Bedford 2000: 240). Sites from the tradition tend to be found at locations of the type which were traditionally targeted by Lapita people as ideal for settlement, being close either to protected bays or harbours and fresh water (e.g. Yalo [MK3] and Apialo A [MK15] on Malakula; see Bedford 2000 for a discussion of the identification of the Lapita sites in Vanuatu). The site of Malangauliuli (MW5) also manifests motifs which belong to this engraving tradition. While there has not been any systematic archaeological research on Maewo targeting potential Lapita sites, Malangauliuli is set in what is generally considered to be a prime settlement location for Lapita colonists, adjacent to a protected bay and a freshwater estuary (Figure 6.2).

Most of the motifs belonging to this engraving tradition are located in the north of Vanuatu, on Maewo and Malakula, with a relatively small number occurring at Potnarvin on Erromango. The two northern islands in my sample (Maewo and Malakula) are those situated closest to Malo, the island which may have served as the ‘focal point’ or ‘metropolis’ for the initial Lapita colonists of Vanuatu (Bedford et al. 1998: 21; Bedford 2000: 244). The high frequency and density of motifs belonging to the engraving tradition on Maewo and Malakula support both archaeological and linguistic evidence that Lapita colonisation was initially focused in the north of the archipelago. The decreasing frequency of motifs associated with this tradition from north to south is consonant with a model requiring that initial colonists arrived in the north and dispersed southwards.

There is some suggestion of regionalism within this essentially homogeneous Vanuatu-wide engraving tradition. The engraving assemblages of Maewo and Malakula, for instance, are dominated by the tradition’s figurative component. That is, there are greater numbers and a
wider variety of engraved faces on these two islands than there are in the southern islands of the sample. Motif Face8/vEGf4 (Figures 6.33 and 6.34), for instance, which displays all of the features denoting the Vanuatu-wide engraving tradition, is found exclusively on Maewo and Malakula, and in large numbers.

So far no direct dates for this engraving tradition have been forthcoming, and thus chronological evidence can only be gleaned from the few examples of superimposition involving engraved motifs, and from comparable features derived from datable archaeological material (such as Lapita pottery). The evidence for superimposition presented in Chapter 7, however, suggests that engravings belonging to this tradition precede all other engravings throughout Vanuatu. As noted previously, CPI engravings from Maewo, which are large circular abraded depressions, underlie two European ships and a fish motif (Fish16). The fish motif has a leaf-shaped structure and rectilinear (chevron) infill characteristic of much of the Black4 rock-art which occurs relatively late in Vanuatu’s rock-art production sequence (see below), and the images of the European ships were obviously produced within the last 400 years.

There is evidence to suggest that the motifs associated with the Vanuatu engraving tradition persisted for several millennia after they were introduced, if not in rock-art then on other decorated media. One only has to look, for example, at recent depictions of the human face. In the northern islands of Vanuatu in particular, the human face has played a decisive role in performances geared towards social ascent, particularly in relation to the propitiation of the ancestors. There are numerous social contexts in which images of the face have been strategically deployed, such as the overmodelled skulls of the deceased in Malakula which were displayed in nakamals as a symbol of the potency of ancestral power (Deacon 1934: 708; Layard 1942: 10). I would argue that the highly controlled (re)production of the face as a theme in contemporary ritual life, associated with social ascent and the veneration of the ancestors, can be traced back to the earliest engraved rock-art in Vanuatu. The reproduction of the face in ancient rock-art and contemporary ritual may well attest to a strong link between past and present systems of social life, particularly in the northern islands.

In Chapter 9, I examine the components of this Vanuatu-wide engraving tradition within a broader western Pacific context. The engraving tradition of Vanuatu manifests many of the components of the AES defined earlier, most notably the ‘cupule-based’ rock-art prevalent at several sites in West New Britain. However, one element missing from the Vanuatu motif corpus, particularly south of Maewo, is the ‘spiral-based’ rock-art common amongst the engravings of East New Britain, New Ireland and Milne Bay. Some spiral-based motifs can
be found among the engraved assemblages of Maewo but whether the multivariate analyses employed later in this chapter (comparing the rock-art of Vanuatu with that of the broader western Pacific region) are sensitive enough to detect this subtle connection remains to be seen.

8.4 A (Lapita period) Red1/Red2 painting tradition (Vanuatu-wide).

Red1 and Red2 motifs have been identified as the earliest painted rock-art in Vanuatu, although their chronological relationship to the Vanuatu-wide engraving tradition (section 8.3) remains difficult to assess due to a lack of superimposition between them. Direct dates for Black1 hands – which supersede Red1 and Red2 motifs throughout Vanuatu – suggest a minimum age of around 2200 BP for the red painting tradition. The following discussion presents a range of evidence in support of the proposition that the Red1/Red2 painting tradition prevailed for a few hundred years after initial colonisation, before being completely replaced by other technical classes.

The Red1/Red2 painting tradition is mainly focused in southern Vanuatu and predominantly on the island of Erromango. Erromango is divided into two distinct rock-art production regions. In the east, around Potnarvin, are remnants of the engraving tradition just described (section 8.3), as well as a variety of other engraved motifs which have a more localised distribution. In the west and south are numerous cave sites which possess Red1 and Red2 motifs; mainly hand stencils but also solid red marks with an indefinable shape. These are often found superimposed by Black1 hand stencils and a variety of Black4 motifs.

The frequency of Red1 and Red2 painted motifs decreases in a northerly direction. The highest numbers occur on Erromango, followed by Lelepa and then Malakula. Red rock-art has not been recorded on Maewo. While further recording may yield more evidence of red rock-art in the northern islands, at this stage the distribution patterns suggest that the Vanuatu-wide Red1/Red2 tradition has a southern focal point, and that the Vanuatu-wide engraving tradition has a northern focal point.41

The Red1/Red2 painting tradition is comparable to the engraving tradition in three principal ways. First, it is found at only a few sites and constitutes only a small proportion of a site’s rock-art corpus; second, it is a homogeneous Vanuatu-wide tradition; and third, it is characterised by a relatively small range of motifs. In combination, these features imply the wholesale transmission of a complex of rock-art from site to site by people of common origin.

41It should be noted that evidence for the presence in the north of the Red1/Red2 painting tradition has been found in a cave site on Hiu [TR10] in the Torres Islands (Shutler 1967).
ancestry. The Red1/Red2 tradition is therefore plausibly an expression of the colonisation and settlement of certain regions throughout Vanuatu, particularly Erromango. Whether the diffusion of the Red1/Red2 tradition coincided with the spread of Lapita (i.e. within the first few hundred years after Vanuatu was initially colonised) is difficult to determine at this stage. Based on current chronological information it is possible only to locate the tradition within the first 1000 years of settlement.

The Red1/Red2 tradition tends to be associated with the larger cave sites in Vanuatu. In the same way that the earliest colonists targeted ideal settlement locales, near protected bays and fresh water, they were most likely attracted to the largest natural caves for habitation and other social activities, such as Yalo (MK3), Feles (LP1), Velemendi (ER2), Velyambo (ER8) and Raoviu (ER18), all of which contain Red1 and Red2 rock-art (Plate 13). Some of these sites are also close to sites from which pottery of Lapita age has been recovered. Yalo, for example, is close to the Malua Bay School site (Mk-3-55) on Malakula, Feles is close to Arapus/Mangaasi on Efate, and Raoviu is close to Ifo (ER-0-2) on Erromango (see Bedford 2000).

The superimposition evidence presented in Chapter 8 suggests that there was no overlap between the Red1 and Red2 rock-art and subsequent traditions (with one exception, described in Chapter 7). This pattern is consistent both with Bedford’s (2000) non-competitive colonisation scenario, and the ‘pioneering’ pattern of initial settlement proposed by Spriggs (1997: 85). Combining the views of both of these authors, it seems feasible to suggest that the initial colonisation of Vanuatu’s prime habitation regions may have been associated with the inscription of large ‘cathedral’-like caves with Red1 and Red2 rock-art (e.g. Yalo [MK3], Apialo A [MK15], Velemendi [ER2], Raoviu [ER18]). Then, once local resources became depleted, perhaps as a result of serious erosion in the landscape or inter-societal competition, these initial habitation areas were abandoned. Some time later, as the population of Vanuatu increased, people moved back into the areas where Red1 and Red2 rock-art was formerly produced and inscribed a different set of symbols on cave walls, completely replacing the earlier red rock-art and creating the patterns of superimposition observed today. According to Spriggs’s model, the later re-use of these prime settlement environments reflect the activities of more ‘conservation-oriented’ communities.

Figure 8.1 shows the distribution of red rock-art across Vanuatu. All Hands are Red1 motifs, and most ‘SA’, ‘Cd2.1’ and ‘CP7’ motifs are classed as Red2 (each shaded in Figure 8.1). Each of these (Red1 and Red2) motif forms has a Vanuatu-wide distribution. Most of the other motifs listed in Figure 8.1 are Red4 linear motifs and are generally restricted to the
central-south region (Lelepa and Erromango). The sequences of superimposition for the rock-art of Erromango suggest that Red4 rock-art persisted after the demise of Red1 and Red2 motifs and that it was probably produced alongside later rock-art traditions defined by similar forms. For example, the superimposition of a red oval motif (Ou29) on a black leaf-shaped motif (Lg3) at ER6 suggests a temporal overlap of Red4 and Black4 rock-art in Vanuatu (see Figure 7.14). As noted in Chapter 6 (section 6.4.3), a recently recorded trade in red ochre in the southern islands might account for the occurrence of red linear forms in this region up until the recent past (Robertson 1902).

Emerging linguistic evidence suggests that the islands of southern Vanuatu were colonised a considerable time after the initial settlement of Efate (Lynch 1999: 439; and see section 5.4, Chapter 5). Given that the Red1/Red2 tradition is more prolific on Erromango than on any other island in Vanuatu, this class of painted rock-art may constitute the material signature of the later phases of colonisation in Vanuatu. This notion is not currently supported by other archaeological evidence and the dates for the Red1/Red2 tradition are insufficiently constrained to render it more feasible. Future research, however, might benefit from focusing on this issue.

In Chapter 9 the Red1/Red2 painting tradition of Vanuatu is discussed within a broader Pacific context, and in particular is reviewed in relation to the broader ‘Austronesian painting tradition’ (APT). As a final point, both the Vanuatu-wide engraving tradition and the Red1/Red2 painting tradition are defined by an unyielding structure not seen in other types of rock-art within Vanuatu. This structure is perceptible not just in terms of the reproduction of a limited range of motifs, but in relation to specific spatial information. The Red1/Red2 tradition demonstrates the spatial characteristic of ‘inaccessibility’, as well as a range of more subtle distribution features described in the site-by-site accounts (Appendix 6.1). For instance, painted Red1/Red2 motifs (and occasionally other red painted technical classes, e.g. Velemendi [ER2]) are often found at the entrances to apses or chambers containing human skeletal material, the effect being that the red rock-art marks a threshold in the cave, located at the interface between the ossuary and the rest of the site. Likewise, at Yalo [MK3] and Apialo A [MK15], for example, all of the motifs associated with the Vanuatu-wide engraving tradition are confined to the walls of sunlit chambers, and at a considerable distance from the cave entrances. While I do not specifically explore the social conditions which may have underpinned these spatial preferences, the fact that certain classes of motifs are not laid out capriciously but, rather, conform to general spatial rules that orchestrate human experience within sites, suggests, at the very least, shared conceptions of space over wide areas.
8.5 A (‘Mangaasi period’) Black1 tradition

The sequence of superimposition presented in Figure 7.14 suggests that, at some point after Red1/Red2 rock-art ceased being produced and perhaps from as early as 2200 BP, a tradition of black stenciling commenced (Plate 14). The most common black stencil throughout Vanuatu is the hand stencil. Large numbers of black hand stencils, found high up on cave surfaces, appear to continue the convention of inaccessibility which characterises the Red1/Red2 tradition. One of the aims of the current ARC dating project (Chapter 7) is to obtain AMS radiocarbon C\textsuperscript{14} dates for hand stencils located in inaccessible locations, the results of which will enable an assessment of whether black stencils represent a continuous transition from the Red1/Red2 tradition. Clarifying this issue will also have major implications for the current debate concerning the transition from ‘Lapita’ to the ‘post-Lapita’ period in Vanuatu (outlined in further detail below).

The earliest date for a black hand stencil in Vanuatu derives from Yalo (MK3) in Northwest Malakula (c. 2200 BP), produced around 1000 years after the initial settlement of this region. Dates are also available on two other stencil motifs (a fish and a walking stick), also derived from Yalo (MK3). Both of these motifs were produced around 1350 BP; around 850 years after the production of Yalo's oldest known black hand stencil and several hundred years prior to the efflorescence of the Rectilinear painting and engraving tradition (see below).

The dates from these black stencils fall within a period thought to represent a phase of abandonment or less intensive occupation in Northwest Malakula – from 2500 BP (the end of the Malua Phase) until 600 BP (the beginning of the Chachara Phase) (Bedford 2000: 85). While it is too early to specify the intensity of occupation in Northwest Malakula on the basis of these stencil dates, they do suggest that total abandonment of the region was unlikely. Forthcoming AMS radiocarbon C\textsuperscript{14} dates on rock-art from Northwest Malakula, however, may allow for a more precise understanding of this issue.

Surface-collected sherds in Malakula have been tentatively linked to Late Mangaasi-style ceramics of Efate and the Shepherds (Bedford 2000: 142), dated from between c.1800 BP and 1200 BP (see Chapter 5). After the Late Mangaasi period, which marks the final phase of ceramic production in central Vanuatu, Malakula began manufacturing a distinctive form of pottery (Chachara Ware) found exclusively in the northern islands. This connection proposed between Malakula and Lelepa during the Late Mangaasi period is currently being tested via the radiocarbon dating of painted motifs shared between the two islands. At this stage we have only two dates on rock-art motifs found on both islands. One derives from a
black hand stencil, and the other from a Black4 vD26 motif (Figure 7.3). The black hand stencil from Valnatamat (LP2) on Lelepa dates to 1921 [1875] 1825 BP and is therefore broadly comparable to the c. 2200 BP age for the earliest black hand stencil from Yalo (MK3), Malakula. Both stencils were produced within the Mangaasi period (c. 2300 BP to 1200 BP). The Black4 vD26 motif at Valnatamat (LP2), which yielded a radiocarbon date of 526 [511] 502 BP, was produced after the Mangaasi period.

Dates on black stencils are yet to be obtained from Erromango but will aid in determining whether this island was also engaged in a tradition of black stenciling at the same time. If stencilling was being practised on Erromango, along with Malakula and Lelepa, from around 2000 years ago then this would lend some weight to Spriggs’s (1984a, 1997) argument for synchronous evolutionary change across Vanuatu from the Lapita into the post-Lapita period, perhaps up to 1500 BP. However, if Erromango was practising another form of rock-art during this period, then the notion that post-Lapita similarities between islands are indicative of independent developments from shared origins (rather than continuous inter-island interaction) would hold more weight (Bedford 2000: 245-247; Bedford and Clark 2001). At this stage the rock-art evidence is inconclusive.

Thus far none of the rock-art motifs dated to the Mangaasi period (2300 BP-1200 BP) resemble those found on Mangaasi-style pottery (see Bedford 2000; Figures 5.19-5.34). Even the Pitah Funtah motif from Malakula which has been dated to 2308 (2043) 1885 BP (Figure 7.3) has no analogues among decorated ceramics. However, as discussed below, many of the features of Mangaasi pottery designs (both in terms of structure and motif) occur among rock-art motifs which are dated to the last 1000 years, two centuries or more after the end of the Mangaasi period. Some possible reasons for this are offered in section 8.6.

### 8.6 A Rectilinear tradition of painting and engraving

At around 1000 BP a major transformation in the rock-art of Vanuatu can be detected. The majority of Vanuatu’s rock-art, which consists mainly of rectilinear Black4 paintings but also numerous (mainly incised) engravings, was produced over the last millennium (Plate 15). What happened during this period that had such an impact on local graphic systems? Green (1997, 1999) has speculated that the last 1000 years saw either sustained contact with non-Austronesians or an influx of non-Austronesians into Vanuatu – particularly Malakula. On first impression this would seem to be an appealing theory given that much of Vanuatu’s rock-art of this period shares similarities with rock-art assemblages to the west, including that of the non-Austronesian-speaking regions of the Highlands of PNG. These links are best portrayed in the diagram of regional rock-art connections shown in Figure 4.32.
Perhaps, however, the situation was a little less clear-cut than this. Closer consideration of the motifs and structural characteristics which define the Rectilinear rock-art tradition in Vanuatu reveals strong parallels with pottery styles that have been attributed to the broad ‘Incised and Applied Relief’ (or Mangaasi) tradition beginning around 2300 BP (Chapter 5). Golson’s (1972a: 565) description of the incised component of the ceramics excavated by Garanger at Mangaasi could easily serve as an adequate summary of the Rectilinear rock-art tradition of Vanuatu:

A particular feature of the incised decoration of Garanger’s early levels as illustrated is the outlined representation of geometric spaces – rectangles, squares, and triangles – and the common infilling of these with longitudinal or transverse lines or by impressed dots ... Particularly interesting are examples where the representation of the geometric space becomes schematic and the close relationship between frame and infilling is lost ...

One of the major decorative differences between Lapita ceramics and later pottery styles attributed to the ‘Incised and Applied Relief’ tradition is that the former is defined by a repeated set of motifs configured in highly structured ways, whereas the latter is more likely to be characterised by unique motifs and a decorative structure which resists easy definition. Unlike the earlier rock-art traditions of Vanuatu which are bound by many of the deeper structures inherent among Lapita ceramics, the motifs characterising the Rectilinear tradition are far more fluid (less rule-bound) and prone to modification. Moreover, unlike the proposed Lapita-age rock-art which is often found in very specific locational contexts (e.g. in inaccessible positions), rock-art belonging to the Rectilinear tradition is found in a range of locales within a site, too broad to define with ease.

How then might the similarities between the Rectilinear rock-art tradition and ‘Incised and Applied Relief’ ceramics be accounted for given that, on current evidence, there is no temporal overlap between them. One possibility is that there is Rectilinear rock-art dated to the Mangaasi period but that it has not yet been found. A second possibility is that the design scheme defining Mangaasi was not absorbed into rock-art until much later. Presumably, given the current temporal gap between the end of the Mangaasi period and the start of the Rectilinear rock-art tradition, this transfer must have occurred via other media.

As already summarised in Chapter 2 (section 2.8), various theories have been proposed to account for the emergence of ‘Incised and Applied Relief’ ceramics. One of these – secondary migration – may also be applicable to the rock-art evidence presented here, specifically because it accounts for links with non-Austronesian speakers (and, by extension, with non-Austronesian graphic systems). Perhaps the emergence of the Rectilinear tradition
(along with the ‘Incised and Applied Relief’ ceramic tradition) can be explained by a secondary spread of Western Oceanic languages of the Meso-Melanesian cluster from New Britain (Ross 1988, 1989); a spread which may have been linked to the ‘replacement of recognizably Lapita pottery by the incised and applied relief styles which are found from the Bismarcks to Fiji’ (Spriggs 1997: 159). In relation to this model Spriggs (1997: 159) suggests that,

Although the associated incised and applied relief pottery styles have their origins in Lapita, they are presumably also influenced in their decorative systems by the Non-Austronesian cultural traditions of neighbouring groups. In this sense we can see the intrusive Austronesian Lapita tradition becoming progressively ‘Melanesianized’ by contact-induced change and innovation to produce the range of local styles found in Island Melanesia in the recent past.

However, it may be necessary to search further back in time than the Mangaasi period to find possible antecedents for the Rectilinear rock-art tradition. A number of motif forms attributed to the Rectilinear rock-art tradition are found on ceramics as old as c. 2750 BP. For instance, an Early Erueti style vessel recovered from Arapus bears motifs which I have described here as belonging to the Rectilinear rock-art tradition (Plate 16).

In view of this evidence, Vanuatu’s rock-art may not necessarily have transformed in a unilinear sequence of serial replacement which saw one tradition commence as another terminated. While the rock-art evidence suggests that the Rectilinear rock-art tradition proliferated in Vanuatu within the last 1000 years, it is possible that some of its antecedents were in circulation up to 1750 years previously, immediately after the decline of Lapita dentate-stamped pottery. The presence of motifs belonging to the Rectilinear rock-art tradition on pottery dating to 2750 BP suggests, among other possibilities (a) that motifs continued to be produced over an extensive time period after their initial inception and, (b) that they were transferred between ceramic and rock-art contexts, and probably also many other types of design media (see below).

One model that might account for the current evidence is that some of the design elements which constitute the Rectilinear rock-art tradition were present in Vanuatu soon after initial settlement (from at least 2750 BP). Then, as Vanuatu continued to be exposed to the movement of ideas and people within the broader Island Melanesian region, motif repertoires evolved and diversified, culminating in the Rectilinear tradition which became most pronounced in the last 1000 years. From this time onwards, as Bedford and Clark (2001) suggest, there were considerably higher rates of inter-archipelagic contact throughout Island Melanesia. Evidence of this contact includes the presence of Banks Island basaltic glass in
Tikopia and Fiji, the widespread occurrence of *Terebra* shell and lenticular stone adzes across Vanuatu (and much of the southwest Pacific), New Caledonian serpentine on Tanna and Polynesian-style ornaments and burial practices in the central and southern islands of Vanuatu. (Bedford and Clark 2001: 71).

The efflorescence of the Rectilinear tradition in the last 1000 years is consistent with other major changes in the material record and settlement patterns of Vanuatu (Spriggs 1997: 187). From around 750 BP settlements became more numerous and some of the previously 'under-utilised' areas of islands witnessed more sustained occupation (Spriggs 1997: 189). In itself this would account for the apparently exponential increase in rock-art activity throughout Vanuatu during this period, and explain why so many of the direct dates obtained thus far for this tradition are constrained within this time-bracket. The Rectilinear rock-art tradition is the most widespread of all the traditions observed in Vanuatu, and one of the principal traditions found at sites known to have been occupied within the last 1000 years (e.g. Velemendi [ER2], Raowali [ER18], Woplamlam [MK2], Navaprah [MK10], Navapule B [MK13] and Navapule C [MK14]).

The Rectilinear tradition also represents a period of increasing regionalisation in Vanuatu rock-art. That is, while this tradition manifests itself throughout the islands, regional preferences are evident (e.g. Figure 6.42). As noted in Chapter 5, it is within the last 1500-1000 years that Spriggs (1997) sees evidence for increasing regionalisation throughout the islands in terms of ceramics and other archaeological materials; a trend which is matched by the rock-art evidence. The Rectilinear rock-art tradition, which conveys a picture of broad regional homogeneity *and* local differences, implies that a combination of processes were in motion. On the one hand there appear to have been high rates of inter-archipelagic contact over the last 1000 years which resulted in widespread transmission of similar artefact types and design styles (including the basic motif repertoire of the Rectilinear tradition), while on the other there appears to have been an increase in the regionalisation of artistic behaviour, leading to the emergence of local innovations and expressions of identity. A range of figurative motifs belonging to the Rectilinear tradition have island-specific distributions, and were therefore probably (re)produced as a result of local influences.

Oddly, while interaction between islands within Vanuatu and between Vanuatu and other archipelagoes appears to have increased in the last 1000 years (Bedford and Clark 2001), rock-art in Vanuatu appears to have become more regionalised. However, according to Wobst's model of information exchange (Chapter 1), an increase in population, such as that which appears to have occurred in Vanuatu over the last 1000 years, can lead to a change in
the nature of social interaction between groups. A similar explanation has been used by Claire Smith (1992: 38) to explain the 'increasingly regionally distinctive and visually more complex art traditions' in Australia. Smith argues that people 'emphasise the differences between them as part of a territorial bounding process'. I suggest that a similar process of territorial marking has also occurred in Vanuatu over the last 1000 years as a result of population increase, despite the continued transmission and exchange of material items across broad regions (as discussed by Bedford and Clark 2001).

The earliest dates available for the Rectilinear rock-art tradition derive from two non-figurative motifs sampled on Malakula. These are CLd14, a central-line motif found as paintings on both Malakula and Erromango, which has returned an age of 931 [916] 791 BP (Figure 7.3); and Xd1, a simple cross motif found in both painted and engraved media on Maewo, Malakula, Aneityum and Erromango, also dating to 932 [916] 790 BP (Figure 7.3). Given that both of these non-figurative motifs have a Vanuatu-wide distribution, it is possible that the beginnings of this tradition specifically indicate the transmission of non-figurative forms across the archipelago. Slightly later in the sequence, from around 700 BP, figurative motifs become more common. For instance, a fish motif from Valnatamat (LP2) on Lelepa has been dated to 624 [534] 507 BP (OZE818), and an anthropomorphic motif from Apialo (MK15) on Malakula has been dated to 690 [581] 520 BP (OZE991).

One of the most significant features of the more recent (and regionalised) bodies of rock-art in Australia is the increase in the figurative component of motif assemblages. Smith (1992: 36) argues that because geometric art contains a more restricted range of motifs than figurative art it is better suited to those strata within social groups which are choosing to emphasise the similarities rather than the differences between them.' It is possible that a similar process occurred in Vanuatu, with rock-art transforming in accordance with an increasing contraction or closure of social networks. Figurative motifs, which are often structurally more complex than many non-figurative motifs, provide greater scope for the expression of local identities. At this stage, however, the temporal division between an early non-figurative and later figurative component for the Rectilinear rock-art tradition of Vanuatu can only tentatively be proposed. Further direct dates on motifs belonging to this and other traditions will help to identify finer-scale variations such as these, and to allow for an exploration of the social factors which might account for such variation.

A study conducted as a companion to this thesis which involved comparing the rock-art of Erromango to other items of material culture, including objects which were known from ethnographic records to have been produced by either women or men (see Appendix 6.2 for...
a full review of this work) throws further light on the Rectilinear tradition. One of the outcomes of this analysis was that the rock-art of the Rectilinear tradition, and particularly the black linear art (i.e. Black4) was not an isolated phenomenon relating specifically to caves, but was part of a graphic vocabulary which spanned a range of material contexts (see Appendix 6.2; p.94; Figure 2). Barkcloth, an item which is known to have been produced and used on Erromango exclusively by women, was shown to share the largest number of identical forms with black linear rock-art. Whether or not the ‘multi-media’ motifs identified in this study were in use on Erromango for three thousand years prior to their incorporation into rock-art and other media, the fact that they occur on ethnographic items (which are almost exclusively less than 200 years of age) is further support for the recent age of the Rectilinear rock-art tradition.

Likewise, many of the motifs on bullet-shaped Naamboi pottery from Malakula are also present in the rock-art of Northwest Malakula. These shared motifs are generally rectilinear in structure, with a focus on composite triangle, diamond and leaf-shaped forms (Plate 17). This pottery, which is known to have been produced within the last several hundred years on Malakula, further attests to the recent antiquity of rock-art motifs assigned to the Rectilinear tradition.

As a final point, even though several paintings have been dated to the European contact period, there is no compelling evidence that a new set of motifs were developed in response to this encounter, other than obvious new subjects such as depictions of European ships.

8.7 Situating Vanuatu within a western Pacific context: non-motif variables

In the remainder of this chapter I conduct a statistical comparison of the rock-art of Vanuatu with that of other parts of the western Pacific with the goal of further refining and accounting for the differences between regional repertoires of painted and engraved rock-art. To this end, two dimensions of the rock-art are examined: non-motif and motif variables.

In Chapter 6 the distributions of non-motif variables associated with the rock-art of Vanuatu were examined, with the aim of assessing whether they were similar to those variables defining rock-art sites elsewhere in Island Melanesia. For a small number of attributes, such as ‘inaccessibility’, there are similarities between rock-art sites in Vanuatu and elsewhere in Melanesia. For many others, however, there are substantive differences. One of the main differences concerns the relative proportions of sites containing both paintings and engravings. Among Specht’s (1979) sample of 383 sites for the western Pacific, only 17
(4.4%) contain both paintings and engravings, and most of these can be provenanced to a single region (the Sogeri District). In Vanuatu, a total of 16 sites (18%) contain both paintings and engravings. Throughout the remainder of this section the similarities and differences between the distributions of non-motif variables in Vanuatu and the broader western Pacific region are examined.

8.7.1 Technique
A major difference between Vanuatu and other western Pacific regions occurs in relation to the total number and distribution of painted and engraved sites. When Specht (1979) mapped the distribution of the two different techniques across the western Pacific he concluded that,

\[\text{the majority of the painted sites are in the western section of the region but rarely in Island Melanesia. The engraving technique is found but rarely in the west; it is becoming more common as we move eastward, until from New Britain and New Ireland eastward it is the main technique (Specht 1979: 63).}\]

However, as more sites are documented in Island Melanesia this former distribution pattern is being transformed. Figure 4.6 indicates that there are greater numbers of painted sites in Island Melanesia than originally supposed. In Manus, for instance, Specht recorded one painted site, but recent surveys in this region have increased the total to 12. For New Britain Specht recorded a total of five painted sites, now increased to 11. For New Ireland, Specht’s total of four painted sites has increased to six. Until recently, the Island Melanesian regions of New Caledonia, Bougainville, and the Solomon Islands were thought not to contain much painted rock-art. Recent archaeological investigations in these regions, however, suggest that painted rock-art assemblages are not as scarce as originally perceived (Christophe Sand, pers. comm 2000; Matthew Spriggs pers. comm 2000; David Roe, pers. comm 2001). This transformed distribution pattern for painted sites is also supported by the Vanuatu data. Specht (1979: 63, Table 3-1) originally reported a total of just five painted sites for Vanuatu. This figure has since increased to 41, including 25 sites containing paintings only, and 16 sites containing both paintings and engravings. It no longer seems viable therefore to conceive of the rock-art of the Pacific as divided into two geographically distinct technical spheres. While it is conceded that engraved rock-art is predominantly an Island Melanesian phenomenon, painted rock-art now appears to span the entire western Pacific region.

8.7.2 Colour
Another difference between Vanuatu and other Pacific regions occurs in relation to the ratio of a variety of colouring agents employed at different painting sites. According to Specht’s
(1979) data, red pigment occurs at over 50% of sites in the western Pacific; black pigment at around 33%, while other colours make up a very small percentage of the corpus of painted rock-art. In contrast, in Vanuatu black is overwhelmingly the most common pigment colour, occurring at 97.5% of painted sites; red rock-art occurs at 42.5% of sites, while other colours comprise a very small proportion of the total. These figures for Vanuatu are consistent with data presented in Chapter 4 which indicate that the relative frequency of black rock-art is higher in Island Melanesia than it is in regions further to the west. Notably, while only one site in Vanuatu contains red paintings only, 32% of sites elsewhere in the western Pacific contain red paintings only. Either red painted rock-art in Vanuatu is only rarely the sole pigment employed or Vanuatu sites which initially only contained red paintings (e.g. cases of Red1/Red2) were re-visited and re-inscribed over long periods of time.

8.7.3 Geology

Further differences between Vanuatu and the broader western Pacific occur in terms of the association between technique and geology. Specht's original data indicated a strong relationship between limestone settings and paintings, and between volcanic contexts and engravings. On the basis of this dichotomy he proposed that a 'conscious selection of rock-type for a certain technique' was occurring (1979: 65). However, recent results from Vanuatu indicate that, while the majority of engraving sites are indeed associated with an igneous geology (61%), a reasonable percentage are also associated with limestone (22%). Most engraving assemblages in Vanuatu associated with a limestone geology are found at the same sites as paintings (81.25%). Of the few sites containing both paintings and engravings elsewhere in the western Pacific, less than 6% are associated with limestone.

An interesting pattern is emerging in relation to the association between technique and geology throughout the western Pacific. In Chapter 4 it was demonstrated that engraved rock-art from Northwest Guadalcanal is most like the majority of painted rock-art of the western Pacific. In Vanuatu, engraved rock-art is often found in geological locations which are elsewhere reserved for painted rock-art (e.g. limestone). Thus, in the eastern parts of Island Melanesia the ‘conscious selection’ of either particular motifs or geological surfaces for the production of painted and engraved rock-art appear to be less evident than in regions further west.

8.7.4 Topography

Further differences occur in relation to topographic contexts. For the western Pacific Specht (1979: 68, Tables 3-8) calculated that paintings are more commonly found in ‘closed’ contexts, such as caves and shelters, but that a reasonable number are also found on cliff-
faces. This is not the case in Vanuatu. There are no painting sites, but at least two engraving sites, on cliffs.42 This evidence for Vanuatu is consistent with Specht’s (1979: 68; Table 3-9) original data which indicated that a relationship between engravings and cliff-faces is much more prevalent in Island Melanesia than it is in regions to the west. In eastern Indonesia, the MacCluer Gulf, throughout the Highlands and coastal regions of mainland PNG, and in Manus, paintings are far more likely to be found on cliff-faces.

Throughout the western Pacific (including Vanuatu) engravings tend to be located in relatively exposed contexts, such as on boulders. In Vanuatu, however, a large proportion of engravings are also concealed in caves and shelters. Overall, Island Melanesia has more rock-art in caves and shelters than the New Guinea mainland and regions further west (Specht 1979: 68; Table 3-9). In Vanuatu, a total of five sites containing engravings only, and 16 sites containing both engravings and paintings, are caves and shelters.

8.7.5 Non-motif variables: conclusions

Specht (1979: 74) concluded from his analyses that there is a widespread engraving ‘style’ (referred to here as the AES) in the western Pacific defined by predominantly curvilinear geometric forms (e.g. spirals, concentric circles, facelike forms), all of which occur on boulders or open rock faces by water courses or the sea, in Austronesian-speaking areas. He added that certain painting sites may also fall within this widespread ‘style’ due to motif similarities, but that the majority of painted sites and a few engraving sites constitute ‘smaller-scale local styles’.

Ballard (1992a) elaborated on Specht’s distinction by proposing that a widespread painting tradition (APT) consisting of a set of cohesive painted motif forms (usually red in colour) occurring on cliff-faces, in inaccessible locations, and commonly in current Austronesian-speaking regions, can also be defined for the western Pacific.

As new data come to light, however, the definitions of both the AES and APT need to be revised. Based on the distributions of non-motif attributes, there now appears to be more overlap between painted and engraved rock-art sites than originally conceived, particularly in Island Melanesia:

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42 Three sites in the column headed ‘location’ in Figure 6.7 are described as occurring on a ‘cliff/outcrop’. This information was derived from David Roe’s (1996) table of site data in which he did not distinguish between a cliff and an outcrop (Figure 6.8).
1. There is a much greater number of painted sites in Island Melanesia than formerly
thought, challenging Specht's (1979) geographical distinction between a predominantly
western painting tradition and an eastern engraving tradition.

2. There is a relatively large number of sites in Island Melanesia containing both paintings
and engravings, contradicting the notion that each technique is associated with particular
locational contexts.

3. There is a relatively large number of engravings in Island Melanesia which are found in
shelters and caves in limestone contexts, contradicting Specht's (1979) association
between engravings and (igneous) boulders located adjacent to water courses or the sea.

In summary, the non-motif criteria which define the APT are most clearly identified in
Manus, Morobe, mainland New Guinea, East Timor and parts of Eastern Indonesia. The
non-motif criteria defining the AES are most clearly identified in the Bismarck Archipelago.
South of this region (and in the Sogeri Area), there is evidence for a convergence of the non-
motif criteria defining each rock-art technique.

8.8 Situating Vanuatu within a western Pacific context: motifs

In Chapter 4, it was shown that the patterns defined on the basis of non-motif criteria for the
western Pacific were broadly supported by the statistical comparisons of motifs, with the
engravings of the Bismarck Archipelago and Milne Bay clustering apart from the paintings
of Morobe and Manus. South and east of these regions it became harder to distinguish
between discrete bodies of 'painted' and 'engraved' rock-art.

In Chapter 6, the frequency analyses for both motif and non-motif variables in Vanuatu also
supported a distinction between engraved and painted rock-art, but with a certain degree of
overlap. Three motif sets were identified: one associated exclusively with engravings,
another associated exclusively with paintings, and a third characterised by the use of both
techniques.

The aim of this section is to determine whether the rock-art motifs of Vanuatu are
statistically similar to rock-art motifs found elsewhere in the western Pacific. The degree of
similarity between the rock-art of Vanuatu and other western Pacific regions is important in
considering the extent to which Vanuatu can be used to assist in the development of a model
of rock-art transformation for the western Pacific.
Analysis 1

An impressionistic comparison of the results from Vanuatu and elsewhere in the western Pacific suggest that Vanuatu’s rock-art lies within a broad regional network of rock-art production. The Vanuatu-wide tradition of engraved rock-art is similar to the AES-attributed rock-art of the Bismarck Archipelago, in particular those curvilinear motifs which are characterised by central cupules and faces. The Vanuatu Red1/Red2 tradition and aspects of Vanuatu’s Rectilinear tradition are broadly similar to the APT-attributed rectilinear painted rock-art of Morobe, Manus, mainland New Guinea and parts of eastern Indonesia. To test these impressionistic links, a correspondence analysis combining the rock-art of the western Pacific and Vanuatu was conducted. The analysis was run on 103 western Pacific sites and 53 Vanuatu sites (comprising a total of 16 regions). Of the total sample of 834 motifs, 275 derive exclusively from Vanuatu. Only non-figurative (Group 1) motifs were included in the analysis, but given that non-figurative motifs exceed the number of figurative motifs in the western Pacific by a ratio of 10:1, any major regional differences should be distinguishable on the basis of an analysis of non-figurative motifs alone.

The results of this analysis are broadly similar to the CA distributions obtained for western Pacific motif data only (Figure 8.2). The rock-art sites of New Ireland and East New Britain shows a high degree of statistical relatedness, with broad connections to Milne Bay. Vanuatu has clustered together with Sogeri, Morobe, Manus, West New Britain, Bougainville, Northwest Guadalcanal, Fiji, and Micronesia in the centre of the graph. New Caledonia, Tonga and Central Province form a somewhat disconnected group in the lower half of the graph. Two principal conclusions can be drawn from this result:

1. The fact that Vanuatu has clustered most closely with the focal regions for western Pacific painted rock-art (i.e. Manus and Sialum) is not altogether unexpected given that most of the rock-art in Vanuatu is painted and belongs to the Rectilinear tradition. Rectilinearity is a dominant structural feature of the majority of painted rock-art in the western Pacific.

2. The presence of West New Britain within the central cluster suggests that the rock-art of Vanuatu shares a number of motifs in common with this region. In most of the multivariate results presented in Chapter 4, West New Britain tended to cluster more

43The time spent generating these results placed excessive demands on my statistical advisor, John Maindonald, and it was therefore not feasible to request that the data-matrices for both figurative and non-figurative data be merged for the purposes of this analysis. The omission of figurative motifs is likely to impact on the overall result, although I assume, based on the experience of previous analyses, that their inclusion would only further support the patterns obtained for non-figurative motifs. However, future analyses would be required to test this assumption.

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closely with other Bismarck regions (i.e. East New Britain and New Ireland). When Vanuatu was entered into the equation, however, the statistical correlation between West New Britain and the East New Britain/New Ireland site cluster was substantially reduced.

The implication of the second conclusion is that a proportion of the rock-art of Vanuatu was strongly influenced by the rock-art of West New Britain, or vice-versa. This notion is explored in more detail in Chapter 9.

**Analysis 2**
A second CA analysis was conducted to determine whether splitting Vanuatu into its five main rock-art regions (MW, MK, LP, ER, and AN) yielded a similar result. The overarching aim was to assess whether the rock-art of certain regions within Vanuatu shares greater affinities with specific assemblages outside the archipelago. The result, displayed in Figure 8.3, indicates that the rock-art of each of Vanuatu’s five regions remains more similar to the rock-art of Sialum, Morobe, West New Britain and Northwest Guadalcanal than it does to the rock-art of East New Britain, New Ireland and Milne Bay. The rock-art of New Caledonia, Tonga and Central Province once again forms a loose group in the lower half of the graph. Each of these three latter regions displays greater affinity with the predominantly painted rock-art of the western Pacific (Manus and Sialum) than with the engraved assemblages of New Ireland, East New Britain and Milne Bay.

**Analysis 3**
A version of multi-dimensional scaling (MDS) was run on the entire data set to examine the relationship between individual sites as opposed to regions. The result is broadly compatible with those generated via the correspondence analyses above. The main cluster on the graph (Figure 8.4) includes sites from Vanuatu and other western Pacific regions. The outliers in this distribution include sites from New Ireland, East New Britain, Milne Bay and Fiji. One site in Vanuatu has plotted between two sites from Milne Bay – a connection most likely influenced by the presence at both locations of a spiral and a particular type of circular motif with hooked appendages.

**8.9 Conclusion**
In the first half of this chapter I presented a model of rock-art transformation for Vanuatu, arguing for the presence of four more-or-less temporally discrete rock-art traditions. While future surveys and an increase in data may alter some of these conclusions, the overall trends for this representative data set are unlikely to change substantially.
In the second half of this chapter the presence and distribution of both non-motif and motif variables found in Vanuatu were compared with other western Pacific regions. It was demonstrated that the non-motif variables of Vanuatu and adjacent regions (e.g. Guadalcanal, New Caledonia) represent a convergence of the non-motif criteria which define the APT and AES further west. Despite this convergence, however, the continuities in the presence of the same non-motif variables across the region (e.g. the use of red pigment; the attribute of inaccessibility) are indicative of inter-regional influences.

The multivariate analyses indicate that the rock-art motifs of Vanuatu are statistically indistinguishable from those found elsewhere in the broader western Pacific region. Given this, it seems reasonable to draw on Vanuatu’s four rock-art traditions to assist in situating the rock-art of other western Pacific within a spatio-temporal framework. The aim is to establish how these traditions fit into the broader frame of Pacific prehistory. Were they imported into Vanuatu as fully-fledged graphic systems from elsewhere, did they develop independent of outside influences, or were they born of a combination of exotic and indigenous processes? Each of these questions is addressed in the following chapter in which a preliminary model of rock-art transformation for the western Pacific is proposed.
Conclusion: the rock-art of Vanuatu in a western Pacific context

9.1 Introduction: developing a model of rock-art transformation for the western Pacific

In the first half of this thesis two models which had been developed for the rock-art of the western Pacific region were described: (1) a region-wide engraving style (AES) which is geographically commensurate with the distribution of Austronesian-speaking areas and (2) a region-wide painting tradition (APT), also identified as commensurate with the distribution of Austronesian-speaking areas. Prior to this thesis, the relationships between these two analytical entities through time and space were unknown. The AES was described as comprising a repertoire of primarily curvilinear engraved motifs (with some painted counterparts), usually found on boulders near or in water courses. It was also identified as being largely concentrated to the east of the Vitiaz Strait, where evidence for the Lapita Cultural Complex have been found. The APT was essentially defined on the basis of locational characteristics. It was identified as a coastal painting tradition, associated with red pigment, and found in inaccessible locations on cliff-faces. The APT, it is claimed, has a broader distribution than the AES, extending from East Timor to Island Melanesia.

The statistical analyses presented in Chapter 4 confirmed this region-wide distinction between painted and engraved rock-art. Four cross-regional (but not mutually exclusive) rock-art groups were recognised and defined on the basis of consistent and repeated combinations of motif and non-motif variables:

1. Manus, Morobe (Sialum), Bougainville. These regions are defined primarily by rectilinear painted rock-art and associated with many of the non-motif variables characterising the APT. The motifs which distinguish these painted assemblages are confined mostly to Island Melanesia and mainland Papua New Guinea. The associated non-motif variables (e.g. inaccessibility) have a much wider distribution, extending as far west as East Timor and the Moluccas.

2. Milne Bay, East New Britain and New Ireland. These regions are primarily defined by the curvilinear engraved rock-art which characterises the AES of Island Melanesia. Some of the associated motifs have a relatively broad distribution, such as the scroll and spiral forms common to the (painted) Manga style of the MacCluer Gulf sites. Others,
such as the enveloped cross, have a more restricted distribution, being found exclusively among painted assemblages in the Highlands of PNG, and in engraved assemblages on the east Papuan coast (e.g. Milne Bay) and in Island Melanesia.

3. **West New Britain (with some links to Central Province, especially the Sogeri area).** Many of the motifs characterising West New Britain (WNB) assemblages are also found in Milne Bay, East New Britain and New Ireland (and vice-versa). West New Britain has been distinguished from these other regions, however, due to the presence of numerous ‘cupule-based’ motifs at most of the sites of the former region. The distribution of cupule-based motifs, and the contexts in which they occur, is limited to the mainland of Papua New Guinea and Island Melanesia.

4. **Northwest Guadalcanal, New Caledonia, Fiji, Tonga and Micronesia.** While displaying considerable local innovation, the rock-art of each of these regions shares elements in common with most other regions in the western Pacific. The rock-art present in these regions is similar to both the curvilinear engravings of the Bismarck Archipelago and Milne Bay, and the rectilinear paintings of Manus, Sialum and Bougainville. This inter-regional group is defined on the basis of a convergence of both motifs and non-motif attributes associated with engraved and painted assemblages in regions further west.

Importantly, the distinctions between painted and engraved rock-art were only apparent within the sample area employed in the statistical analyses. That is, within the western areas of Island Melanesia (but including samples from mainland Papua New Guinea, such as Central Province, Milne Bay, and Morobe), a distinction between assemblages of paintings and engravings was clearly evident. Painting assemblages from Manus, Sialum (Morobe) and the Bismarck Archipelago clearly manifested the characteristics which distinguished western Pacific ‘paintings’ from western Pacific ‘engravings’. The most salient of these characteristics included the structural motif feature of ‘rectilinearity’, as well as many of the locational features typical of the APT (coastal, inaccessible, cliffed locations). Likewise, the engraved assemblages of Milne Bay and the Bismarck Archipelago were found to manifest the principal components of the engraved rock-art of the western Pacific. Among the most salient features were motif ‘curvilinearity’, and many of the locational features typifying the AES (boulders on or adjacent to water courses). East and west of these regions the distinctions between engraved and painted rock-art appear less definitive. For instance, in the Highlands of Papua New Guinea painted versions of the engraved motifs common to the AES are found, as are *inland* examples of motifs and locational characteristics said to typify the essentially *coastal* APT. To the east, in Northwest Guadalcanal, New Caledonia, and Fiji, and to the north in Micronesia, further cross-fertilisation of the elements defining
the APT and the AES have been discovered. For example, ‘faces’, usually associated with engraving assemblages, have been noted at the Vatulele cliff-painting site in Fiji, and a number of the motifs and locational characteristics (e.g. inaccessibility) characterising the painting assemblages of Manus and Sialum are found among the engraving assemblages of Northwest Guadalcanal. While the rock-art of all regions within the sample contains the major elements of the APT and AES, implying cultural connections either through colonisation or post-settlement interaction, there is evidence of a breakdown or reconfiguration in the ‘rules’ associated with each of the two major techniques in eastern Island Melanesia.

The chapters that followed this regional analysis then presented an intensive analysis of the rock-art of Vanuatu, with the aim of teasing out the variation between paintings and engravings to determine how motif and non-motif elements associated with each media are related in time and space. The non-motif and (multivariate) motif analyses presented at the end of Chapter 8 have demonstrated that the rock-art of Vanuatu is embedded within a broad and homogeneous regional network of rock-art which spans the entire western Pacific region. Being located towards the eastern end of the sample area, the rock-art of Vanuatu displays a certain degree of divergence from both APT and AES criteria, yet manifests evidence of the engraving/painting dichotomy (but with certain overlaps, see Chapter 6) which is pervasive throughout the western Pacific.

Notably, as discussed in Chapter 4, the multivariate analyses presented throughout this thesis have been unable to determine the nature of relationships among different western Pacific rock-art traditions or styles over time. Thus, for example, the regional homogeneity observed on the multivariate graphs may be the result of a short period of rock-art production during which communities across the western Pacific were in contact with one another (e.g. during the Lapita period). In other words, the motifs associated with the earliest and most widespread rock-art traditions may be responsible for the appearance of overall homogeneity observed on the graphs. Alternatively, such clustering may be the result of sustained subsequent contact across the western Pacific over the last 3000 or years or more.

At present, the only conceivable way of resolving the problem of atemporality in the data is through reference to the relatively robust chronological sequence emerging from Vanuatu. Given that the rock-art of Vanuatu is statistically indistinguishable from the majority of rock-art elsewhere in the western Pacific, it seems reasonable to draw on the synchronic and diachronic patterns obtained for the rock-art of Vanuatu in anchoring the rock-art of the western Pacific within a spatio-temporal framework. The following model of rock-art
transformation for the western Pacific redefines the AES and APT, and attempts to situate various spatially and temporally definable subsets of rock-art within a socio-historical context.

9.2 The AES: a redefinition

The multivariate analyses presented in this thesis have demonstrated that the basic components of the AES originally identified by Specht (1979) are responsible for an undercurrent of homogeneity amongst engravings in the western Pacific. However, as illustrated in Figure 9.1, a further refinement of this engraving style into (at least) three subsets is now required. The first and second subsets, labelled 'cupule-based' and 'spiral-based' respectively, conform most closely to Specht's (1979) original conception of the AES, being denoted by primarily curvilinear forms. The third 'rectilinear' subset has emerged as a result of the analyses undertaken over the course of this thesis, and refers to engraved rock-art which is more convergent with the painted rock-art of the western Pacific. Reading Figure 9.1 from left to right, a gradation from a subset of engraved motifs which consists 'purely' of engravings to other subsets which have counterparts among painting assemblages can be seen. Of these subsets, each has a definable geographic distribution and, as I endeavour to demonstrate here, each is temporally discrete. For this reason each subset is referred to as a separate 'tradition' (see Chapter 1 for a definition of a 'tradition'). The emergence of each tradition appears to have coincided with particular cultural transformations that have occurred in the western Pacific, the details of which are presented below. As a final note, the use of the acronyms 'AES' and 'APT' continue to be useful for describing some of the overarching differences between engravings and paintings in the western Pacific. In Figures 9.1 and 9.2, the AES and APT should be perceived as useful starting categories (and perhaps even 'super-traditions') which have since been refined and elaborated upon, with the once ill-defined spatial and temporal relationships and overlaps between them starting to come into focus. I now describe and define each of the AES traditions in turn.

9.2.1 Cupule-based tradition: from c. 3300 BP

The cupule-based tradition is strictly engraved and is presumed to be one of the earliest rock-art traditions in the western Pacific (from c. 3300 BP). 'Cupules', circular and usually abraded depressions, are among one of the most pervasive features of the tradition, with motifs commonly constructed around these forms. The tradition has an extensive distribution in the western Pacific, but is particularly pervasive in West New Britain and Vanuatu. It is the rock-art nexus between these two regions which forms the basis of the historical interpretations presented in this section.
**Motifs and structure**

The cupule-based tradition identified throughout the western Pacific, including Vanuatu, is best illustrated in Figures 6.27 and 6.28. The tradition is defined by a relatively small range of generally curvilinear motif categories, such as circles, ovals, bean-shapes, heart-shapes and Type2 faces, each of which is commonly embellished with central or off-centred cupules. Concentricity is a pervasive structural characteristic, as is contiguity (mainly of circles).

**Non-motif attributes**

The tradition is found on either boulders or in limestone caves, and is particularly prevalent in West New Britain (e.g. the sites of Garua, Akono Sogo, Cao-go and Malapapua). Sites in East New Britain and New Ireland also bear elements of this tradition, but in these regions engravings which are rarely found in Vanuatu (except in Maewo) occur in large numbers, particularly those characterised by a spiral-based structure (see below).

**Distribution**

The cupule-based engraving tradition maps fairly neatly onto the distribution of Lapita sites, and incorporates several of the motifs (e.g. dentate marks resembling cupule formations, Type2 faces) and deeper structural qualities which denote Lapita dentate-stamped ceramics (e.g. a limited range of motifs, a widespread distribution, and a strict set of design rules). The tradition as a whole cannot confidently be argued to exist west of the Bismarck Archipelago, with the exception, perhaps, of the Sogeri Area and Mt Hagen (as discussed in Chapter 4). Throughout eastern mainland New Guinea there are examples of motifs defined by central and off-centred cupules that are often locally described as ‘vulvae’. It is possible that these motifs were produced within the same cultural sphere that generated the cupule-based tradition described further east, but most of the sites in which they are found contain only individual elements rather than the full spectrum of attributes by which the tradition is characterised.

**Linguistic correlations**

Strikingly, with the exception of the individual examples of cupule-based motifs found at sites in eastern mainland New Guinea, the geographic distribution of the cupule-based tradition closely matches the regional extent of the Oceanic subgroup of Austronesian languages in the western Pacific. The Oceanic subgroup correlates in turn with the distribution of the Lapita Cultural Complex (Pawley 1999). It is to this relationship between
the cupule-based tradition and Lapita that I now turn in an attempt to situate cupule-based rock-art within a socio-historical context.

Cultural and chronological implications

One of the possible reasons for West New Britain (WNB) clustering so closely with Vanuatu in Figure 8.2 may be because WNB is the source region of the Vanuatu-wide engraving tradition. Cupule-based motifs, as well as their inherent structural features (e.g. curvilinearity, contiguity), are ubiquitous among the rock-art sites of WNB. In Chapter 8 it was proposed that the beginning of the earliest Vanuatu engraving tradition coincided with the initial Lapita colonisation of the region. Here this argument is extended to suggest that cupule-based rock-art developed from an early Lapita-age graphic system which originated in WNB and was transmitted to Vanuatu with the earliest settlers. Various strands of evidence suggest this as a likely scenario. Some of the most diagnostic features of the cupule-based tradition, such as Type2 faces, emerge within the graphic repertoire which defines Lapita. This would situate the beginnings of the tradition at around 3300 BP. Further evidence for the age of the cupule-based tradition are supplied by the dating evidence from Vatuluma Posovi in Northwest Guadalcanal (see Chapter 3). The engraved rock-art from this site includes a number of 'cupule-based' motifs, one of which was discovered in a sub-surface context older than 3259 [3062] 2892 BP (Roe 1992a; Figure 5, p.118). The problem is that this date on a single example of cupule-based rock-art suggests that the rock-art of Vatuluma Posovi may be of Lapita and/or pre-Lapita age. It is therefore necessary to consider additional forms of evidence (such as the connection between the cupule-based rock-art of West New Britain and Vanuatu) to resolve these chronology questions. Given that the colonisation of Vanuatu is dated to no earlier than c. 3000 BP, it is unlikely that the cupule-based tradition significantly pre-dates this time.

The cupule-based engraving tradition occurs in much higher concentration and frequency in WNB than it does in Vanuatu. If Lapita and the cupule-based rock-art tradition were being produced simultaneously, then this variation between WNB and Vanuatu could probably be accounted for in terms of the relative time available for each tradition to develop within each region. Consistent with the relatively long time span within which Lapita (and hence cupule-based rock-art) may have had to develop in WNB (c. 600 years), the region has a rich concentration of Lapita sites and Lapita decorative styles. Correspondingly, consistent with the short lifespan of the early Lapita phase (and hence cupule-based rock-art) in Remote Oceania (i.e. 200-300 years), Vanuatu has a relatively thin distribution of Lapita sites and relatively low quantities of Lapita pottery (see Bedford 2000).
It is tentatively proposed that the distribution of this early engraving tradition matches a colonisation scenario, as many of the motifs which constitute this tradition are possibly among the earliest forms in the engraving assemblages of Polynesia (Millerstrom 1990: 79), and may have arrived with the founding colonists. In the Marquesas and Hawai‘i in particular, circular motifs with central cupules, contiguous circles, and Type2 faces are especially common, suggesting that they represent the tail-end of a Lapita-derived colonisation process. The extensive presence of this tradition in Polynesia parallels a settlement history of relative isolation and subsequent conservatism in rock-art development. In Vanuatu, in contrast, the tradition persisted for a relatively short time, explicable in terms of the archipelago’s historical placement within a relatively extensive inter-island network and therefore its continuing exposure to external influences and design styles.

In this attempt to situate the western Pacific cupule-based rock-art tradition within a socio-historical framework, it must be acknowledged that, like Lapita ceramics, the cupule-based tradition has no convincing antecedents to the west, in mainland New Guinea or in Southeast Asia, suggesting that it may have developed in situ, and without particularly strong exogenous influences. This evidence is placed into a broader context in the conclusion to this chapter where the cupule-based tradition is assessed in relation to Green’s (1991b) notion of local innovation, discussed in Chapter 2.

Finally, the notion that cupule-based rock-art is linked to an episode of Lapita colonisation is rendered more convincing by the fact that rock-art is not a transactable commodity. The close similarity between the cupule-based rock-art of different areas, which is fixed in the landscape rather than circulated between islands, strongly suggests that the initial phase of expansion out into Remote Oceania was engineered by genetically, linguistically and culturally related communities.

9.2.2 Spiral-based tradition: from c. 3300 BP, but flourishing after c. 2000 BP

The spiral-based tradition, which may date from c. 3300 BP but flourishes after c. 2000 BP, is defined by motifs structured principally around spiral and scroll forms. It is represented by both paintings and engravings, though each technique has a discrete geographic

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44See for example motifs 7310 (cupule with tail), 7401 (cup and ring), 7402 (cup with more than one ring) and other ‘cupule-based’ motifs in the Lee and Stasack’s (1999) Hawaiian motif inventory (pages 175-179); Lee’s (1992: 87; Figure 4.70) illustration of an ‘eye/nose’ (Type2) faces found on Easter Island; and Millerstrom’s (1992: 21; Figure 2) examples of mata komoe (Type2) faces from Marquesas Islands. Many of the ‘eye-mask’ faces from Easter Island also resemble the cupule-based contiguous circles which are prevalent in the assemblages of West New Britain (see for example Lee 1992; Figure 422, p. 58). These can be compared with motifs Cc8-Cc16 (Appendix 4.2) and Face 3
distribution. In broad terms, paintings are found in the Highlands of PNG and areas to the west, and engravings are concentrated on the east coast of PNG and in Island Melanesia to the east.

Motifs and structure
In Chapter 4 I sought to demonstrate that a subset of the AES, defined largely on the basis of spiral-based motifs, is common among the engraving assemblages of East New Britain (ENB), New Ireland (NI) and Milne Bay (MB). Apart from a single spiral (and possibly some 'hooked' circles) on Aneityum, and a range of forms found at Subeng (MW4), Malangauliuli (MW5) and Malangatavarsoso (MW6), spiral-based forms are rarely found in Vanuatu. They occur relatively extensively in West New Britain (WNB), an area which was undoubtedly exposed to the same cultural influences which promoted the production of this subset in ENB, NI and MB. However, in WNB spiral-based motifs constitute a less predominant component of the rock-art corpus. Often associated with this tradition are elaborate scroll-like motifs, including Type1 faces (Spriggs 1990b) discussed previously in this thesis, and enveloped crosses.

Non-motif attributes
Apart from its occurrence at a cave and a shelter site on Maewo (MW5 and MW6), the spiral-based tradition is found exclusively on boulders. Apart from one possible exception from north Efate (Appendix 6.1), enveloped crosses always occur on boulders.

Distribution
Apart from one example of a painted spiral at Paruai on New Ireland, the spiral-based tradition in Island Melanesia is strictly engraved. To the west, however, spiral-based motifs are prevalent in the painted assemblages of mainland Papua New Guinea, West Papua (particularly the Manga style of the MacCluer Gulf), East Timor, and other parts of Eastern Indonesia. Thus, unlike the cupule-based tradition which has an essentially Island Melanesian distribution, the spiral-based tradition (and its motif component in particular) spans a much wider geographic area.

Linguistic correlations
While the engraved aspect of this tradition is geographically confined to the area dominated by the Oceanic branch of Austronesian languages, spiral-based motifs (painted and engraved) are found across a range of linguistic boundaries, including the Central Malayano-

(Refer to Appendix 6.4). A number of the 'small eye mask faces' from Easter Island (Lee 1999; Figure 4.25, p.59) are also comparable to the vCP26 and Face 12 (Appendix 6.4).
Polynesian (CMP), the South Halmahera-West New Guinea (SHWNG) and Oceanic language areas, as well as several Papuan-speaking areas in eastern mainland New Guinea (Figure 9.2). Notably, however, the engraved versions of the spiral-based tradition are generally situated within the boundary delineating each of the Western Oceanic language clusters. Western Oceanic developed out of a Proto-Oceanic language thought to have emerged in the Vitiaz Strait-West New Britain region (Ross 1988). This region then saw the emergence of the languages which subsequently dispersed southward to the Massim and the Papuan south coast (Papuan Tip Cluster), and to northern New Guinea between the Huon Peninsula and West Papuan border (North New Guinea Cluster). In each of these coastal regions, rock-art and other visual media are dominated by motifs characterising the spiral-based tradition.

Cultural and chronological implications
While small numbers of motifs denoting the spiral-based tradition appear to have penetrated areas to the south-east of the Bismarck Archipelago, the tradition has a more restricted distribution than the cupule-based engraving tradition. Given that the engraved rock-art motifs and structural qualities denoting the spiral-based tradition, including a single enveloped cross from the Nenumbo Lapita site in the Reef Islands (Chick and Chick 1978), can be found on Lapita pottery, the spiral-based tradition could have emerged as a regional variant of a Lapita-aged art. As noted by Lilley (1999: 27),

> the Austronesian languages of the Sepik coast developed from language(s) which descended from language(s) conceded by many ... to be spoken by most, if not all, makers and users of Lapita pottery, and did so in a distant locality.

Perhaps, then, the spiral-based tradition represented a regional development of the Lapita era (separate from the cupule-based tradition) which was then transmitted to the east Papuan coast via later west-east dispersions of Austronesian languages at around 2000 BP to the Massim and south Papuan coast, and again perhaps around 1500 BP along the north New Guinea coast (Lilley 2000: 186). In Chapter 2 (section 2.4.2) evidence of later restricted exchange networks within the Lapita period were noted. The spiral-based tradition may well represent evidence of a contraction of interaction expressed in terms of more regionalised rock-art.

Aspects of this engraving tradition can also be seen in the painted assemblages of the New Guinea Highlands, such as enveloped crosses and 'scissor forms', implying that the spiral-based tradition was produced within a sphere of contact with non-Austronesian-speaking communities.
The argument for a post-Lapita efflorescence of the spiral-tradition at around 2000 BP accords well with other archaeological evidence. Although the enveloped cross – a component of the spiral-based tradition – has been noted on Lapita pottery, this particular form is more prevalent on post-Lapita ceramics which emerge around 2000 BP (e.g. the Plum pottery of New Caledonia (C. Sand, pers. comm. 2001). The enveloped cross is also one of the most common motifs at the Micronesian engraved site of Pohnpaid (Pohnpei, Caroline Islands). On current evidence, the island of Pohnpei was colonised not much earlier than 2000 BP, thus providing a maximum age for the rock-art at this Micronesian site (Rainbird 1994). I would argue, therefore, that while the spiral-based tradition may have its origins in the Bismarck Archipelago during the Lapita period, it essentially flourished only after 2000 BP.

From about 2000 BP, at the time when Austronesian speakers are thought to have colonised the Massim and Papuan south coast, there was a concomittant spread of metal from Southeast Asia into western Melanesia, reaching as far east as the Admiralty Islands (Ambrose 1988; Spriggs 1989: 607; 1998). Dong-son bronzes, which extend as far east as Sentani in West Papua, bear a number of design similarities common to the spiral-based tradition identified in the engraved rock-art of Island Melanesia (though enveloped crosses are notably absent). The Dong-son tradition which appeared in the Vietnam/southern China source area around 2000 BP can be mentioned here as a possible alternative source for spiral-based rock-art.

9.2.3 Rectilinear (engraving) tradition: from c. 1000 BP

The third subset of engravings identified over the course of this thesis belongs to a tradition collectively known as the 'rectilinear tradition'. As the name implies, there is a vast body of engraved rock-art which is essentially defined by a rectilinear structure (and motif range) that is more typical of the painted rock-art of the western Pacific. In Vanuatu, engraved rectilinear rock-art has been identified as an adjunct of a predominantly painted tradition which flourishes after c. 1000 BP. Various cases of superimposition in Vanuatu have identified that many of these rectilinear engravings were produced using a technique of incision which overlies an earlier range of circular abraded forms (probably belonging to one of the two traditions described in sections 9.2.1 and 9.2.2). I propose that rectilinear engravings form part of a much broader rectilinear tradition that is dominated by painted rock-art. As attested by the multivariate analyses conducted in Chapter 4, and the frequency analyses on the rock-art of Vanuatu in Chapter 6, the engraved component of this tradition is more commonly found in the eastern regions of Island Melanesia. Much of the rock-art of
Northwest Guadalcanal, for example, was shown to cluster with the rectilinear painted rock-art of Manus and Sialum (Morobe). Rather than attempt to situate the engraving component of the rectilinear tradition within a broader cultural context in this section, however, interpretations are reserved for a later stage in this discussion when the rectilinear tradition as a whole is summarised as a subset of the APT (of which engraved rectilinear rock-art forms an integral part).

9.3 The APT: a redefinition

Throughout this thesis I have indicated that the APT, as originally formulated by Ballard (1992a), requires some redefinition. While I would argue that the APT has stood the test of time, being manifest in most western Pacific regions in a variety of guises, I propose that the APT is divisible into at least four subsets (Figure 9.3). The first three subsets presented in Figure 9.3, which are predominantly found in the western half of the western Pacific, adhere most closely to Ballard’s original conception of the APT. The fourth subset is mainly found in Vanuatu and represents a significant departure from the APT. The third subset, ‘rectilinear red’ is perhaps best described as intermediate, existing in regions which are dominated by rock-art sites represented by both ‘curvilinear red’ and ‘rectilinear black’ motif repertoires. Although no single subset is mutually exclusive, there is a perceptible west-east clinal distribution associated with the APT, particularly with regards to the last three subsets. Curvilinear red motifs reduce in frequency toward the east, grading into rectilinear red, and finally rectilinear black motifs. The non-motif features of inaccessibility, coastal ‘cliffed’ locations and ‘spatially connected funerary remains’ also reduce in frequency in an easterly direction. In the remainder of this section each of these subsets (here termed ‘traditions’) are considered in turn. I also explore the relatively controlled sequence of chronological change established for the painted rock-art of Vanuatu for clues as to the cultural factors which may have led to the development of these APT subsets at a broader western Pacific level.

9.3.1 Red1/Red2 tradition: from c. 3000 BP

The Red1/Red2 tradition is proposed to be the earliest painting tradition in the western Pacific (from c. 3000 BP). It is defined by a small range of motifs, and manifests most of the criteria defining the APT. Elements of this tradition appear to be sporadically distributed throughout the western Pacific, its clearest signature being in Vanuatu.

Motifs and their distribution

This tradition was first identified in Vanuatu, where it is defined by three features: red pigment, motif inaccessibility, and a combination of stencil (mainly hand stencil) and solid pigment forms. The first two features – red pigment and inaccessibility – are common
throughout the western Pacific, as far west as East Timor. Sites possessing the third feature (red stencils and red solid forms) have a more sporadic distribution, occurring in East Timor, the MacCluer Gulf (West Papua), the Sepik, a select number of Papua New Guinea Highland sites, Sialum (Morobe) and Fiji.

Linguistic correlations
As originally identified by Ballard (1992a: 97), the distribution of sites possessing features of the APT conforms broadly to the current distribution of Austronesian-speaking (AN) communities. There is a particularly strong correspondence between the distributions of APT sites and Austronesian-speaking (SHWNG subgroup) enclaves along the coastline of West Papua, which takes in the MacCluer Gulf sites. However, as noted in Chapter 3, there is a range of sites located in non-Austronesian-speaking (NAN) areas, particularly in the New Guinea Highlands, which also possess several (but usually not all) of the features of the APT. Some of these, such as the Sialum sites in Morobe and the Sogeri area sites in Central Province, might possibly be accounted for in terms of their turbid history of language replacement involving both AN- and NAN-speaking communities. Others, however, such as those in the Eastern Highlands, require an alternative explanation. In Chapter 3 Ballard’s (pers. comm. 2001) suggestion that certain graphic elements belonging to the APT may have spread from coastal Austronesian-speaking areas into the New Guinea Highlands via the movement of tapa technology was noted. If this was indeed the case, then a study of painted motifs found on a range of media needs to be undertaken if the social interaction between coastal and highland communities is to be understood.

Cultural and chronological implications
The superimposition evidence from Vanuatu suggests that Red1/Red2 rock-art precedes all other technical classes, including black stencils. While there are no direct dates available for the tradition, a minimum age is provided by the oldest black hand stencil so far known in Vanuatu which is dated to c. 2200 BP. In the MacCluer Gulf, red hand stencils form a ubiquitous component of the early Tabulinetin style. The Tabulinetin, however, consists of a more extensive motif range than the Red1/Red2 tradition in Vanuatu, comprising red infilled silhouette forms (including images resembling artefacts), fish (identifiable to species level), hand and foot stencils, a few linear anthropomorphs (which increase in frequency in the Manga and other later styles), and the occasional ‘human-lizard’ form. Stencils of axes, thought to be Dong-son bronze axes, provide a maximum age for the Tabulinetin, and indeed the entire MacCluer Gulf sequence, of no earlier than 2300-2100 BP (Spriggs 1989). Given the differences, however, between the motif ranges defining the Vanuatu and MacCluer Gulf assemblages, it is difficult to link the two regional bodies of rock-art specifically. Instead, I
would argue that the earliest signs of the APT (in the form of the Red1/Red1 subset) appear in the Western Pacific prior to 2200 BP and, based on the Vanuatu sequence, possibly as early as 3000 BP. This is slightly earlier than originally proposed by Ballard (1992a) who suggested that the tradition emerged in conjunction with later movements of Austronesian speakers into southern Papua around 2000 BP.

Unlike the cupule-based engraving tradition which has a restricted distribution generally within Island Melanesia, the APT (which commences with the Red1/Red2 subset) transcends various linguistic boundaries and is most strongly linked to the Austronesian-speaking areas far to the west of Island Melanesia. In seeking potential elements which may be intrusive into the Island Melanesian region around the time of Lapita, or slightly later, the basic components of the APT (red pigment and inaccessibility) may have their possible antecedents in the CMP and SHWNG linguistic areas to the west. However, given that the earliest relative dates for Red1/Red2 in Vanuatu potentially predate the earliest occurrence of the APT in the MacCluer Gulf, further testing of this proposition is required. I would tentatively suggest however, given the overwhelming predominance of red pigment rock-art in areas to the west of Vanuatu (especially in the MacCluer Gulf and other parts of Eastern Indonesia) that the basic elements of the red painting traditions of the western Pacific were introduced into Island Melanesia from the west. This notion is examined further in section 9.4.1 in relation to Green’s (1991b) Triple-I Lapita model.

9.3.2 Curvilinear red tradition: from c. 2000 BP

The curvilinear red-tradition is defined by spiral and scroll motifs and probably emerged at the same time as the engraved spiral-based tradition which appears to have flourished after c. 2000 BP. Its distribution is focused in regions to the west of the east coast of PNG.

Motifs and their distribution

The curvilinear red tradition is dominant in areas to the west of the rock-art regions for which the statistical analyses for this thesis were undertaken. A range of curvilinear motifs, displaying strong formal parallels with elements constituting the engraved spiral-based tradition, are found extensively among the painted rock-art assemblages of East Timor, the Moluccas, West Papua, and other parts of Eastern Indonesia, and are particularly evident in painted rock-art of the Manga style in the MacCluer Gulf. A few curvilinear motifs (including numerous scissor and scroll-like forms) are also found at rock-painting sites in the New Guinea Highlands, suggesting that the Curvilinear red tradition was produced within a sphere of interaction which extended to Highland communities.
Cultural and chronological implications

I propose that the curvilinear red tradition is the western counterpart of the eastern spiral-based engraving tradition, and that it emerged around 2000 BP alongside the initial appearance of metal in the region. Spriggs (2000: 68) has suggested that

[alt the time Dongson drums were spreading, perhaps the period around 2000 BP, eastern Indonesian products such as cloves were reaching both China and Rome going the other way, and other products were also coming out of this new frontier of the growing 'world trading system' such as birds of paradise (Swadling 1996), sandalwood and other forest products from the region on northern Australia's doorstep.

For a brief moment, perhaps, the periphery of this 'world system' even included Manus, with its single piece of bronze (Ambrose 1988).

It seems highly likely, given the dynamic and seemingly uninhibited movement of material items during this early period of the Southeast Asian Metal Age, that rock-art would have been influenced by the dominant graphic systems operating at the time (particularly between Eastern Indonesia and New Guinea).

I further propose that the curvilinear red tradition evolved out of an already strong APT tradition (already present in the Tabulintin style in the MacCluer Gulf) but that it readily absorbed incoming design ideas pervasive during the Metal Age. Likewise, I suggest that the engraved spiral-based tradition observed in areas such as Milne Bay evolved out of an already strong tradition of engraving in Island Melanesia. In sum, I suggest that basic foundations of the APT and the AES (i.e. the tradition of painting involving red pigment and inaccessibility; and the tradition of engraving involving curvilinearity and the use of boulders as canvasses), remained unchanged, but that motifs across the entire region underwent significant transformations in response to the growing participation of the western Pacific in a 'world trading system'.

As a final note, at the same time that rock-art production in the western parts of the western Pacific was experiencing transformations during the Metal Age, the rock-art of Vanuatu appears to have been taken a somewhat different trajectory. The Vanuatu black stencilling tradition, which I have argued commenced around 2200 BP, is characterised by rock-art which is vastly different to that being produced after 2000 BP in regions to the west. The crucial implications of this finding are elaborated upon later in this chapter.
9.3.3 Rectilinear red tradition: from c. 1400 BP

As the name implies, the rectilinear red tradition is characterised by red pigment motifs of rectilinear structure. Based on a maximum age for this tradition from a site in New Britain, it is known to have been active some time within the last 1400 years. Its distribution extends as far west as Eastern Indonesia (e.g. Kei Kecil, MacCluer Gulf) but it appears to have flourished on mainland PNG and in western Island Melanesia.

Motifs and distribution
The rectilinear red tradition has a more easterly distribution than the curvilinear red tradition. It represents the dominant painted corpus of mainland PNG and western Island Melanesia, and it also forms a substantial component of site assemblages in East Timor, the Moluccas and West Papua. Engraved equivalents of the motifs which constitute this tradition have been recorded from sites in Northwest Guadalcanal and Vanuatu.

Motifs common to this tradition are defined by a rectilinear structure. Thus, even if the motif category is essentially curvilinear (e.g. a circle), the appendage and infill lines which accompany this main shape are generally straight or angular (e.g. the straight line 'rays' surrounding 'sun symbols'). Common among the rectilinear red range are non-figurative motif categories such as triangles, diamonds, and forms which are constructed around a central axis line. Stick-figure anthropomorphs, often depicted with flexed arms and legs, are also frequently found. The rectilinear red tradition is almost always located on exposed cliffs or shelters, close to the coast, and at inaccessible heights. Close proximity to human skeletal remains in cliff-shelters is also a defining feature (e.g. Lake Kutubu in the PNG Southern Highlands; the Buang Valley and Sialum sites in Morobe Province).

Linguistic correlations
The rectilinear red tradition is most closely linked to the Western Oceanic language area, and is particularly focused on Manus and the Bismarck Archipelago. Close links with Sialum, on the adjacent Huon Peninsula, are also evident, as are more distant links to sites scattered among the New Guinea Highlands. The tradition is also present, although less common, on the eastern side of the border separating Near and Remote Oceania (e.g. Vanuatu). For Vanuatu, I have suggested on the basis of motif correlates that rectilinear red rock-art is synchronous with much of the region's Black4 rock-art (which has been dated to within the last 1000 years).
Cultural and chronological implications

The dating of the rectilinear red tradition, which is clearly a component of the APT, relies entirely on the dating of a volcanic event at Rabaul, in East New Britain. As noted in chapter 3, 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. The paintings have been executed in red pigment on a tuff rock surface at about 3m above the water level, and the motifs include crosses, a circle with an internal cross, an indistinct human figure, a 'phallic' motif, and a possible hand (Specht 1966). Both the motif and non-motif features of this site satisfy the criteria of the APT, and conform to the red rectilinear subset identified here for the western Pacific. 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 for a distance of at least 50 km from the source in the centre of the Rabaul Caldera. The paintings were therefore produced after this time.

While the maximum age of 1400 BP for the rock-art at the Beehives cannot be taken as a starting date for the rectilinear red rock-art tradition as a whole, it does correspond well with the timeframe for the development of the stylistically comparable rectilinear tradition of Vanuatu. I suggest that the motifs which constitute the rectilinear red rock-art in Near Oceania form part of a broader tradition of rectilinear art which flourished in Vanuatu at a slightly later date (see below). This statement, however, requires some qualification. As indicated in Chapter 8, some of the rectilinear motifs found in the painted rock-art of Vanuatu in the last 1000 years are present on ceramics derived from the Arapus site which have been dated to 2750 BP. By stating that the tradition defined by red rectilinear paintings seen at Rabaul and other Near Oceanic sites was probably antecedent to the black linear rock-art of Vanuatu it is not implied that all black linear (and other rectilinear) rock-art in Vanuatu was transmitted to Vanuatu from the west. Instead, I propose the following broad transformations for the Vanuatu region:

a. the earliest rock-art in Vanuatu was dominated by curvilinear or Red1/Red2 motifs but accompanied by a range of rectilinear motifs.
b. the later rock-art of Vanuatu was dominated by rectilinear motifs, some of which represent a graphic extension from earlier ceramic repertoires extending back to at least 2300 BP, but possibly as early as 2750 BP. Others may have been generated through contact with the symbolic traditions which gave rise to red rectilinear rock-art further west.
9.3.4 Rectilinear tradition: from c. 1000 BP

The Rectilinear tradition is most likely a direct off-shoot of the Rectilinear red tradition which occurs throughout Island Melanesia. It is most obvious in Vanuatu where it is represented by both paintings and engravings. The motifs which characterise this tradition are defined by rectilinearity, and the motif range is based around angular shapes such as triangles, diamonds and central line axes. Absolute dates for this tradition suggest that it reached its peak within the last 1000 years.

Motifs and distribution

The rectilinear painted and engraved tradition has been identified on the basis of this study in Vanuatu. The painting component of this tradition demonstrates a major departure from the APT, with the exception of its motifs which are found extensively among sites defined by the rectilinear red painting tradition prevalent in Near Oceania. However, the non-motif features of the APT seem to disappear in Vanuatu once black linear rock-art becomes the dominant rock-art type. Black linear rock-art, which forms the major technical class among the rectilinear tradition, is found in caves or shelters rather than on cliff-faces, is usually quite accessible (i.e. less than two metres above the ground surface), and can be found at significant distances inland from the coast. The motif range is broader than for any other tradition observed in the western Pacific, and there appear to be very few cultural rules dictating its production (e.g. it is not defined by specific locational characteristics such as inaccessibility).

The engraved component of this tradition is found not just in Vanuatu (where it occurs predominantly on Maewo and Aneityum), but also in other parts of Island Melanesia, such as Northwest Guadalcanal, New Caledonia, Fiji, and at the Pohnpaid site in Micronesia. In each of these regions one finds rectilinear engraved rock-art, which is structurally and formally akin to both rectilinear red and rectilinear black rock-art.

Cultural and chronological implications

One of the more recent debates in western Pacific archaeology has focused on whether perceived similarities in the post-Lapita period (i.e. after c. 2500 BP), and particularly those observed between 'Incised and Applied Relief' ceramics recovered from Mussau, Manus, New Ireland, Watom, Nissan-Buka, Vanuatu and New Caledonia, are a result of sustained inter-island and inter-societal contacts (Spriggs, in press), or represent a parallel evolution from a common Lapita design system (Bedford 2000, Bedford and Clark 2001). The results derived from the rock-art analyses conducted in this thesis tend to offer more support for the latter model, especially between c. 2300 BP and c. 1000 BP.
It was demonstrated in Chapter 8 that certain rectilinear motifs present on Erueti-style pottery from Arapus, dating to 2750 BP, form an integral component of the ubiquitous black linear paintings in Vanuatu which date mostly to within the last 1000 years. This evidence supports the idea that at least some motifs present among ceramics prior to 2750 BP have persisted as an element of Vanuatu's graphic repertoires since Lapita times. Moreover, the lack of evidence for black stencils in other parts of the western Pacific from c. 2300 BP until c. 1000 BP suggests that rock-art production within Vanuatu was, for the most part, following its own regional trajectory rather than participating in a broader Pacific-wide network. For instance, the lack of evidence for a spiral or curvilinear red tradition in Vanuatu after 2000 BP suggests that many of the Metal Age transformations occurring in graphic systems further west failed to register any impact on the rock-art of Vanuatu.

Together, this evidence suggests that Vanuatu rock-art production was not overly influenced by external conditions between the end of the cupule-based and Red1/Red2 tradition (after 2200 BP) and c. 1400 BP-1000 BP. Within the last 1000 years, in particular, rock-art production in Vanuatu flourished. During this period there was an increase in the production of rectilinear motif forms which are structurally similar to motifs known to have been produced after 1400 BP elsewhere in the western Pacific (e.g. the Beehive Rocks). Such motifs are not only present in rock-art contexts but also on regional ceramics, as testified, for example, by the strong connections between Rectilinear rock-art in Vanuatu and designs found on Oundjo pottery in New Caledonia — which also dates to the last 1000 years; Sand 2001b: 77) (Plate 18). Many of the rectilinear motif forms observed in the non-Austronesian-speaking regions of the New Guinea Highlands are also similar to the rectilinear rock-art being produced in Vanuatu at this time, implying that the opening of communication networks between Vanuatu and other island groups within the last 1000 years exposed the region to the 'Melanesianized' graphic systems which had come to dominate the western Pacific.

As a final note, it is within the last 1000 years that Polynesian influences were felt throughout Island Melanesia, as attested by a range of linguistic and social transformations (Spriggs 1997). While I have not conducted a systematic comparison between rock-art repertoires from these two broad regional areas, the impression is that there are no obvious examples of rock-art which might be attributed to the influence of this Polynesian "backwash". There are certainly influences which I would tentatively suggest were transferred from Island Melanesia in an easterly direction with the initial Polynesian colonists. The cupule-based rock-art of Island Melanesia, for instance, appears to constitute
a considerable proportion of the rock-art repertoires of Polynesia. If there were any subsequent influences from east to west they would have registered in the rectilinear engraved and painted tradition of the last thousand or so years in Island Melanesia. In the absence of a more probing analysis, two possible influences can be canvassed:

1. Apart from Easter Island and the North Island of New Zealand, most of the rock-art of Polynesia is rectilinear. Polynesian communities which traveled to Island Melanesia might thus have contributed to the prevalence of rectilinear rock-art, particularly in Vanuatu.

2. In contrast to the rock-art of Island Melanesia, much of the rock-art of Polynesia consists of figurative motif forms. While no direct connection can be seen between, for example, the stick- or triangular-bodied anthropomorphs from Hawai‘i and the Marquesas (Stasack and Lee 1999; Millerstrom 1990), or the ‘birdman’ engravings from Easter Island (Lee 1992), the influence of Polynesian migrants may have contributed to the increase in figurative motifs which we see among the most recent rock-art traditions, particularly the black linear rock-art of Vanuatu.

9.4 Conclusion and future recommendations

9.4.1 The AES and APT: analytical fictions?

The fundamental aim of this thesis has been to formulate a preliminary model of rock-art transformation for the rock-art of the western Pacific region. Carrying out this task initially required determining the nature of the relationship between two existing models of rock-art: the ‘AES’ and the ‘APT’. There is clearly some degree of reality to these two analytical concepts, to the extent that the analyses conducted in Part 2 of this thesis demonstrate that the rock-art of the Pacific does broadly separate out into two groups on the basis of technical differences. However, following the alternative model presented above, the AES/APT distinction appears to be relevant only at the earlier stages in the sequence of rock-art production in the western Pacific. Of the rock-art traditions identified in the western Pacific, only two clearly correspond to the technical distinction between the AES and the APT: the cupule-based engraving tradition and the Red1/Red2 painting tradition. These two traditions are technically distinct, with discrete but overlapping geographic distributions that both lie broadly within the distribution of Austronesian-speaking communities. In Vanuatu, for instance, the Red1/Red2 tradition is focused in the south of the archipelago, and the cupule-based tradition in the north. Elsewhere in the western Pacific, components of the Red1/Red2
tradition extend from East Timor to Fiji, while the cupule-based tradition is focused in Island Melanesia.

With the termination of the Red1/Red2 and cupule-based traditions there is a breakdown in the rules associated with the AES and the APT. For instance, from around 2000 BP various scroll, spiral and enveloped-cross motifs are represented in both media, but are generally painted in the west and engraved in the east. From 1000 BP, red rectilinear motifs which were formerly depicted in inaccessible locations (e.g. New Britain and New Ireland) are found in Vanuatu to be randomly distributed at varying heights above the ground, and often portrayed in black rather than red pigment. To the west, motif elements associated with the rectilinear traditions occur extensively in the non-Austronesian-speaking areas of mainland PNG. This is in contrast to the earliest painting tradition (Red1/Red2) which is concentrated in Austronesian-speaking regions.

It has only been possible to define the points of convergence and divergence between the AES and the APT via a systematic examination of motifs and non-motifs through space and time. As a result, both the AES and APT have been shown to be too simplistic to capture the degree of complexity and dynamism that characterises the rock-art of the region. The model which I propose in place of the AES and the APT is represented in Figures 9.1 and 9.3, and in summary form in Figure 9.4.

Although attention has been drawn to the limitations of the AES and the APT, the fact remains that these two analytical entities offer a reasonably accurate impression of the distinction between the two earliest traditions in the western Pacific: the Red1/Red2 and cupule-based traditions. How might the extreme differences between these two traditions be explained, given that they are most likely synchronous? I have already suggested that the cupule-based tradition is spatially and temporally commensurate with the Lapita ceramic tradition of Island Melanesia. Certain salient motifs (such as the face), as well as a range of deeper structural qualities, are shared by both the Lapita ceramic and cupule-based rock-art tradition. To the west of Island Melanesia, we see no convincing analogues for either cupule-based engraved rock-art or Lapita ceramics. Given that both the cupule-based rock-art tradition and Lapita pottery appear to be found only in Island Melanesia, it is highly likely that they both represent local innovations, influenced to some degree through contact with pottery-producing communities to the west.
However, red painted rock-art, which is strongly linked to the distributions of Austronesian communities both in eastern Indonesia and Island Melanesia, is a convincing example of an intrusive cultural element which was perhaps introduced through the movement of red-slipped pottery-producing communities from the west. In Eastern Indonesia and adjacent regions, red-slipped pottery and a cultural assemblage consisting of specific shell ornaments, polished stone adzes and the bones of domesticated pig and dog have been found, dating from around 3300 BP. Being contemporary with Lapita, this pottery is often presumed to be associated with a dispersal of Austronesian-speaking communities into the Bismarck Archipelago (Spriggs 1997, Bellwood 1998: 961).

Drawing on Roger Green’s (1991b; 2000) model which distinguishes between the influences of Integration, Intrusion and Innovation, it is proposed that the cupule-based rock-art tradition represents an example of local innovation within Island Melanesia or, in Green’s (2000: 373) terms, ‘something arising which has no direct antecedents’. The red painted rock-art of Island Melanesia presents the most convincing case for intrusion, displaying strong links to rock-art regions in Eastern Indonesia. As yet there is no evidence of integration with previous art traditions from the western Pacific region. One form of pre-Lapita art which may eventually be useful for comparison is the assemblage of decorated mortars and pestles, which are currently being examined by Pamela Swadling of the Australian National University. The earliest examples of mortars and pestles derive from Kuk, in Papua New Guinea, in contexts dated to around 7000-7500 BP (Golson 2000: 239). At this stage, however, visual links between the motifs associated with mortars and pestles and those found in rock-art are not obvious.

9.4.2 The future of rock-art research in the western Pacific

The study of motif and non-motif elements in the rock-art of the western Pacific has been a necessary but only preliminary component of much broader research programs which can now be undertaken in this field. Throughout this thesis I have hinted at the potential of two broad fields of enquiry: the social and cultural contexts of rock-art, and the scope for transfer between rock-art and other media.

a) Research which focuses on the social contexts in which rock-art were produced offers an exciting direction for western Pacific rock-art studies, especially those which involve asking questions concerning why people produced rock-art, and how rock-art reflects culturally embedded experience. A handful of studies has already attempted to situate rock-art within social frameworks of meaning (e.g. Gorecki and Jones 1987a and 1987b; Ballard 1988b; Spriggs and Mumford 1992; Roe 1992a). However, now that such studies can be couched
within spatial and temporal frameworks, our ability to track the origins and developments of social contexts for particular rock-art traditions is vastly improved.

b) Almost every writer on Pacific rock-art has observed the need for cross-media studies but, without the firm typological and chronological basis for comparison that this thesis provides, such studies have been restricted to passing references and incidental illustrations of similarities between different media. For example, Newton (1988: 15) argues that allomorphs of both Lapita and Roti bronze axe designs are found across a range of media, extending into Southeast Asia. Plate 19 shows visual parallels between Newton’s ‘Lapita 2’ (equivalent to Spriggs’s [1990b] ‘Type 1’) motif, barkcloth from Lake Sentani, a New Britain mask, and a conus shell engraving from Collingwood Bay (Milne Bay Province). The same design is also found in the rock-art of West New Britain. Based on this and a multitude of other examples of cross-media correlations, it appears plausible that most rock-art did not develop in isolation. It is therefore likely that, in the near future, each of the rock-art traditions I have identified in this thesis will be extended and refined to take account of interactions with a range of art media.

This thesis has provided the basis for the incorporation of rock-art into broader archaeological studies in the western Pacific. It is my hope that it might also encourage Pacific archaeologists to reconsider rock-art as a line of evidence in their reconstructions of the past.
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