Maynard, Lesley Ann
M.A. June 1977
a University Medal.
AN ARCHAEOLOGICAL APPROACH
TO THE STUDY OF
AUSTRALIAN ROCK ART

Lesley Maynard

Thesis submitted for the degree of
Master of Arts, University of Sydney,
1976.
Index

Chapter | Page
--- | ---
1. An Introduction to Aboriginal Art, via the Literature | 1
2. The Archaeological Study of Aboriginal Art | 39
3. Classification and Terminology of Australian Rock Art | 76
4. Rock Art near Laura, Cape York Peninsula | 117
5. Laura Cave Paintings: A Quantitative Analysis | 146
6. Prehistoric Rock Art in Australia: A Proposed Sequence of Styles | 174

Acknowledgements | 244
Bibliography | 245
Chapter 1.

An Introduction to Aboriginal Art, Via the Literature

Aboriginal works of art are put to a particular use by social anthropologists who study Aboriginal culture (see Berndt, 1958b). They help to focus information about magic and religion, spirit beings, ritual performances and social organisation as it is reflected in ownership of designs or techniques. Anthropologists gather this information from living Aborigines who still practise many visual arts. Berndt's study of the Djanggawul and Kunapipi myth cycles in Arnhem Land involved bark paintings and carved wooden figures (1951, 1952); Elkin's investigation of beliefs about Wandjinjas and other spirit beings in the Kimberley commenced with the famous cave paintings in this area (1930, 1933, 1948).

The role of historic and prehistoric Aboriginal art in Australian archaeology is less clear. A very large amount of descriptive and recording work on art, and particularly rock art, has been done, and is still in progress. A great part of this activity is carried out by interested amateurs (for example, Sim, 1962-69). Many articles are published in Australian anthropological journals, and public interest in this topic leads to a good coverage in the Press and in popular magazines. These tend, naturally, to emphasize the more exotic aspects, and several very striking theories about the "origins" of various cave paintings and rock engravings have seen the light of day in this fashion (for example, Terry, 1967).

On the other hand, in many of the serious articles in the journals, exhaustive descriptions of subject matter, technique and superimpositions, shaky reconstructions of local mythology and hyper-cautious speculations about "significance" often seem to be trying to make up for the lack of a sound archaeological conclusion. Most articles about art contribute nothing to the sequence of prehistoric cultural events which archaeologists want to build up in Australia. (There are, of course, a number of exceptions; these will reveal themselves later.)

It may be these aspects of Australian Aboriginal art studies which cause Mulvaney, in the last section of the last chapter of The Prehistory of...
Australia, to seem a little wary of this topic.

It is difficult for a prehistorian to assess Aboriginal art. Until recently, it possessed no time depth, because, except for a fallen engraved slab uncovered in an upper layer at Devon Downs, antiquity could be inferred but not demonstrated. Systematic unravelling of stylistic superimposition, developed by F.D. McCarthy, provided a relative sequence for some areas; yet the absolute age of all styles involved is undetermined, and it is rash to correlate over great distances. Neither can an Australian prehistorian escape the conditioning influence of ethnographic data. A prehistorian may infer methods of application or techniques of engraving, from observation, but comments concerning motivation and meaning is beyond the scope of normal archaeological activities. (1969: 174)

The rest of this discussion "Prehistory and Art", is a résumé of all the things that cannot be inferred about prehistoric Aboriginal art (174-7).

The purpose of this thesis is to discuss the rôle of rock art as an artifact, which, like stone tools, cave deposits, food remains, burials and other archaeological stock in trade, can be used, with the application of various techniques of study, to determine prehistory. Especially the technique of typology in Australian art studies will be discussed, and a new system of classification and terminology is herein suggested. Some large cave-painting sites in north-east Queensland will be taken as an example for typological and quantitative exercises, and some conjecture made about the relationship of this material to other Australian rock art.

It is not, however, intended to investigate the prehistoric anthropology of the art - that is, to speculate on its religious or other role in previous cultures. Specialised methods are now being developed to attempt this task; vide Leroi-Gourhan, 1968 and Clegg, 1971; but this study is not concerned with them.

It seems worthwhile to begin by considering the nature and quality of the general field of Aboriginal art studies from the nineteenth century to the present. The Berndts gave a very brief outline of this topic - mainly just a list of the well-known names - in The World of the First Australians (349-50). I would like to present more detail about more writers, and to evaluate the contributions of some of them. The rest of this chapter consists of a personal survey of Aboriginal art studies, arranged in a roughly chronological order. On the other hand, so many workers have
added bits and pieces to this enormous field that a complete history of
the topic would be extremely long, difficult to compile, and not very
useful. Mine is, therefore, a selection. But apart from the well known
art studies, I have also included some writers who have made quite
small contributions, which have attracted my attention for some particular
reason. And some writers whose work has special significance for the
archaeological study of Australian art, have been held over to Chapter 2.

Incorporated in this review of the literature are some brief descriptions
of the most important Aboriginal art forms throughout Australia. Although
there are a number of comprehensive accounts of Australian Aboriginal art
(Berndt, 1964, 1968: 348-82; McCarthy, 1962a, 1967), it is useful to
include here a little basic information about material to which many
references will be made in the rest of this thesis. A description of
each major art form has therefore been integrated with the discussion of
the most relevant research worker.

The early colonists noticed that the natives produced some art - in their
opinion, very crude art. Specimens of Aboriginal art were described, and
sometimes illustrated, along with specimens of the even more interesting
fauna and flora of the new land. The aloof, distant tone of these
nineteenth century observers, confident in their superior culture, their
coolly detached philosophical deductions tempt quotation - confidence
now become quaintness.

In 1789, Stockdale saw, in the carvings of the Sydney tribes, an occasion
to comment on the "theory for the progress of invention"

... In all these excursions of Governor Phillip, in the neigh-
bourhood of Botany Bay and Port Jackson, the figures of animals,
of shields, and weapons, and even of men, have been seen carved
upon the rocks, roughly indeed, but sufficiently well to ascertain
very fully what was the object intended. Fish were often
represented, and in one place the form of a large lizard was
sketched out with tolerable accuracy. On the top of one of the
hills, the figure of a man in the attitude usually assumed by
them when they begin to dance, was executed in a still superior
style. That the arts of imitation and amusement should thus in
any degree precede those of necessity, seems an exception to the
rules laid down by theory for the progress of invention. But
perhaps it may better be considered as a proof that the climate
is never so severe as to make the provision of covering or shelter
a matter of absolute necessity. Had these men been exposed to a
colder atmosphere, they would doubtless have had clothes and
houses, before they attempted to become sculptors. (106-7)
George French Angas conducted the only contemporary anthropological research on the Sydney carvings.

... The natives say, that "black fellow made them long ago"; and, to convey an idea of remote antiquity, they hold up their fingers and hands, elevate the face, shut the eyes, and say "Murrey - murrey - murrey - long time ago" - shaking the head each time they pronounce the word "murrey".

They agree in stating that the tribes did not reside upon these spots, assigning as a reason - "Too much dibble-dibble walk about"; for they greatly fear meeting the 'dibble' or some evil spirit in their rambles, and never leave their camp at night. They state that these places were all sacred to the priest, doctor or conjurer - for the one is the other among these tribes.

Some comments about the carvings were wheedled out of "Old Gooseberry", the widow of "King Bungaree":

In her statements she says she was no eye-witness - "Bel I see it, my father tell me" - so that all is a matter of legend relating to these carvings.

Though the tribes did not reside in these places, I am informed that they used to have mystic dances or festivals on this Ko-ra-jee land, and that they used to fight as well as dance. Poor old "Gooseberry" said in a mysterious tone, "drag gin", which means, run off with the women. It is customary with the natives to take the women of another tribe by force; stunning them, and actually dragging them into the bush. One chattering native added very seriously, "Pi, fellow", "Kill fellow"; but a look of anger from the more cautious "Gooseberry" prevented further information as to human sacrifices. (1847: 272-3)

In these early publications, only the most interesting figures at a site were selected for description and discussion. "Artists' impressions" of motifs were used for illustration; graphic recording methods were not employed. This "specimen" presentation of Aboriginal works of art was continued into the early twentieth century by a number of writers who discovered and reported on some of the rock carvings and cave art in the Sydney district. The most prolific was R.H. Mathews, who, between 1892 and 1918, published nearly 200 short articles on numerous ethnographic and archaeological subjects, including many on Aboriginal rock art. These are wholly descriptive, frequently repetitive, and virtually non-analytical (see Greenway, 1963: 234-41).

A much more useful contribution was made by W.D. Campbell, a surveyor, who in 1899 produced a monograph on the Sydney carvings which included
the first published scale drawings of whole sites, instead of just single figures. Campbell recorded carvings over a large area from Gosford in the north to Botany Bay in the south.

It is now known that these carvings extend from the Hunter River to Royal National Park, and west as far as the Blue Mountains, and in fact this distribution corresponds closely to the area in which the rock type called Hawkesbury Sandstone is found on the surface. This sandstone forms large flat horizontal surfaces where it outcrops on the top of ridges, and on these the Aborigines engraved thousands of outlines of human and semi-human figures, animals, birds, fish, weapons, tracks and footprints, as well as other non-figurative motifs. Unlike figurative carvings in other parts of Australia, the Sydney figures are most often depicted life size or almost so, and not in miniature. Their outlines consist of shallow pits set closely in a line; some have been rubbed over, forming a smooth groove.

Because the soft stone weathers comparatively quickly, a great many of the carvings are now difficult to see. Some of them were made in the last days before the local Aboriginal culture died out - there are several sailing ships depicted among the other motifs; but lack of geological information about the properties of the sandstone prevents dating of the older figures.

Campbell described only 176 of the thousands of groups of engravings which are now known, but many of those which he recorded in the immediate city area have since been destroyed. He was the first to set a high standard of accurate recording and detailed publishing which has been followed by others working in the Sydney area.

At the same time, Baldwin Spencer and P.J. Gillen were observing the living art of the tribes of Central and Northern Australia who still, at the turn of the century, followed their traditional way of life. Their detailed ethnographic accounts of initiation and totemic ceremonies showed that rock art was only a small fraction of the total output of art by one functioning Aboriginal culture (Spencer and Gillen, 1899).

The most spectacular Central Australian art forms are produced for these ritual performances, although many of them are temporary constructions -
manufactured on the spot out of common materials, used in one ceremony - sometimes lasting only a few minutes - and then destroyed or dismantled. In this category are the performers' elaborate body decorations in paint and featherdown, and their large headdresses made of twigs, leaves, grass, or human hair string, and decorated with coloured down and feathers. The function of this regalia is to temporarily convert the human actor into the ancestral spirit with whom the group performing the ritual is concerned. This spirit can also reside in large ceremonial items, called waninga and nurtunja by the Aranda. The waninga consists of coloured strings stretched over a frame made of crossed sticks or spears, and the nurtunja is a thick pole made of spears bound together; both are further decorated with various feathers and down. These are carried by the actors, or set up at the ceremonial ground. For some rituals of the Waramanga tribe, designs are worked on the ground itself in coloured ochres - those recorded by Spencer and Gillen consisted of concentric circles and undulating lines forming a series of pleasing visual combinations (1912: 406-8 and Figs. 281-93).

Almost all of the art of this central area consists of non-figurative motifs, mainly circles of various kinds, curved lines and dots, which are symbolic representations of real and mythical subjects, known to the manufacturers and performers. Bird and animal tracks and human footprints usually represent the travels of the various characters in the myths. Combinations of these elements are found engraved on the highly sacred tjuringa, which are flat oval stone slabs and wooden boards, owned by each totemic group and playing a large part in its ritual life. Most of the rock paintings found at important sacred sites are composed of these few design elements. There are a few crudely drawn figurative motifs among the rock art - they are found at the non-sacred sites, and according to the Aborigines interviewed by Spencer and Gillen, they did not "mean" anything important (1899: 614-18).

Because their study of Central Australian art was integrated with their observation of the sacred life of these tribes, it comes across as much more interesting and important than the detailed recording of prehistoric rock art in N.S.W. And yet, because they were not studying art per se, and could not devote a lot of attention to setting down and analysing the various motifs, there are visible gaps in their record of this part of the culture.
Photographs showing groups of initiates, each with a complex totemic design painted on his back, indicate the large number of designs used in this area (1899: Fig. 87). Although the anthropologists illustrate numerous examples of totemic motifs, on tjuringa, on rocks, and as ground paintings and body decorations, one realises that their study could not hope to cover the whole range of this decorative art. It would also be interesting to know the distribution of the different forms and design elements over the area studied, and the various circumstances in which they are used. The authors do point out the interesting differences between the designs and materials used in the sacred rituals which are open only to the fully initiated men, and those made for the secular "corroborees", which are occasions for general entertainment in the ordinary camps (1899: 618-35). These "corroborees" were exchanged-dances, songs and body decorations in-toto by the tribes, and might travel so far from their point of origin that their meaning was not understood by the ultimate recipients (624).

On the other hand, the sacred designs are owned by a group of men, and passed on from generation to generation, but they can not be alienated in any way. A rigid control is exercised by the old men over the form and decoration of all the ritual equipment - there appears to be no place for individual creativity by the artists actually making the objects.

Spencer and Gillen compiled comprehensive ethnographic accounts of Aboriginal groups. Their description of the art of these tribes is quite adequate for understanding the rôle which it played in the religious aspect of these cultures. But it also makes one wish that a contemporary study could have been focused on this fascinating art. Our formal record of traditional Central Australian decorative art is much less complete than, for example, available descriptions of prehistoric rock carvings near Sydney (e.g. McCarthy, 1941-54; Sim, 1962-9), or of decorative art in Arnhem Land, which was studied intensively in its own right during a later period (Mountford, 1956).

The first writer to study Aboriginal art on an Australia-wide basis was Davidson, who published articles on a number of aspects of Aboriginal culture between 1926 and 1953. His main interest was the geographical distribution of different cultural traits, and art was only one aspect of
Aboriginal culture to which he applied the distribution study method. By surveying museum holdings and references in historical and ethnographic literature, he produced comprehensive maps showing the Australian distribution of different types of spears, spearthrowers, throwing clubs and boomerangs, stone tools, watercraft, netting and basketry techniques, some social institutions such as circumcision, and design motifs found in decorative art (see Greenway, 1963: 108-10). The aim of these studies was to determine the sequence in which different traits entered Australia from diffusion centres to the north.

The Geographical Distribution Theory (see Davidson, 1928) postulates that a trait diffuses more or less evenly from its point of origin. As a trait spreads, it replaces the item which was previously filling the relevant niche in the culture of the recipient group. Therefore, the distributions of different traits in relation to each other, and to the presumed point of origin, shows the chronological sequence in which they have been introduced into an area, and have successively replaced each other across the map. The ideal model of the distribution of a sequence of several successive traits, all deriving from a single point of origin, would be a series of concentric circles. The trait found in the outside circle would be the oldest.

In Australia, the north of the continent is presumed to be a constant entry point for all introduced traits, and a northerly and/or central distribution indicates a recent introduction, and a southerly and/or peripheral distribution indicates an older feature. A discontinuous distribution also represents an older trait, with the replacement driving a wedge between the remnant areas. For example, Davidson concluded that heavy, one-piece spears, thrown by hand, were an early Australian trait, because historically they were used only in Tasmania, the extreme southwest of Australia, and in a few other isolated areas. Elsewhere they had been replaced by light, composite spears, used with a spearthrower (Davidson, 1934).

The Geographical Distribution Theory should not be used rigidly to put culture traits into chronological sequence, because it fails to take into account other possibilities such as independent invention, multiple centres of trait diffusion, or factors which effect the rate and direction of the transmission of traits. Geographical barriers,
environmental factors and pre-existing cultural conditions might influence the acceptance or rejection of new ideas. It is possible that, instead of a series of traits spreading evenly like ripples on a pond, a very acceptable trait might overtake the ones in front of it and reach the outskirts of the study area ahead of older traits. Although, for these reasons, the theory should not be applied in detail, it is useful to explain some of the general features of the distribution of culture traits in Australia. For example, the culture of the historic Tasmanians probably did represent many features of an early phase in Australia; this is reinforced by the rise in sea-level at the end of the Pleistocene and by mainland prehistory. In the north of Australia, a number of traits can be traced directly to Indonesian and Melanesian influences (McCarthy, 1940: 258-69 and 294-310); they are probably comparatively recent introductions. The Geographical Distribution Theory is implicit in most explanations of cultural process in Australia, and it has been used in the study of Aboriginal art by other writers besides Davidson.

In 1936 and 1937, Davidson published two long articles on Australian rock art and decorative art respectively. The former is a survey of all the literature then available on rock art throughout Australia. This material was very fragmented and of uneven quality. Most of the line illustrations of rock art which Davidson reproduced from other writers appear to have been freehand sketches of selected figures, and they give very little idea of total sites, some of which are better known from later research (for example, see Davidson, 1936: 34-6). It is difficult to compare sites because of the differences in representation and reproduction. The main distinction which Davidson made was between rock carvings and cave paintings (which he called "petroglyphs" and "pictographs", in the American Style), and he described examples of each found in each state of Australia. This presentation did not produce any clear impression of distribution patterns. In some of the sites illustrated, figurative motifs predominate, geometric motifs in others, but Davidson did not emphasis this to any purpose. Because few parts of Australia had been investigated, even superficially, for rock art sites, Davidson's distribution maps showed only a number of isolated circles, many of which represented only a brief report of a few figures at a single site (1936: Fig. 1, p.5 and Fig. 28, p.68). Davidson did not draw any interesting conclusions from this study.
His study of Aboriginal decorative art was more rewarding (1937). Decoration of equipment and ceremonial objects was practised everywhere in Australia except in Tasmania, although the selection of items for decorative treatment, and the techniques used, as well as the actual design motifs, varied greatly from place to place. A very large range of Aboriginal artifacts came into the decorative art category set up by Davidson. It really consists of everything which is not rock carving or cave painting - every object in Aboriginal culture which includes some visual effect achieved by the use of colour, shape or surface treatment which is superfluous to its practical use.

Some items of equipment which are in everyday use in the community are ornamented - some permanently, such as wooden objects with incised designs, others temporarily, such as weapons which are freshly painted for gatherings or fights. Then there are some items - mostly weapons - which are made purely for display purposes, and elaborately carved or painted. These pieces are not intended for any practical use, but they derive their form and their identity from the simpler functional models - they are still thought of as spears or boomerangs. Other decorated objects are constructed exclusively for use in ritual performances, and these have no other rôle than to exist as items of decorative art in their particular context. Nor does every item in Aboriginal life, which could, in one way or another, be described as decorative art, fit neatly into these three categories of practical, display and ceremonial objects.

Whatever the rôle of the decorative object, virtually all ornamentation procedures are carried out by men. Probably because a lot of the art is very sacred, and therefore secret to men, all art-work, even on objects which are on view to the whole community, is thought to be more properly a male occupation.

The main techniques are painting - which is really only a temporary medium, because the Aborigines have no effective fixatives to stop the pigments from rubbing off, and incising, where the whole design is formed of shallow grooves. There are a number of other minor techniques, such as the sticking on of featherdown to form temporary patterns, and some very simple carving in the round. Except for a few outstanding exceptions, decorative designs consist of simple geometric forms, usually closely
related to the shape of the objects on which they are applied.

Davidson selected a number of these "design elements" and plotted their appearances on decorated objects of known provenance. He drew maps (of which Fig. 1:1 is an example) showing the geographical distribution of concentric circles, herringbones, incised concentric squares and rhomboids, zig-zags, chevrons, lattices, large criss-crosses and angular meanders, wherever these patterns occurred on any kind of object.

He next divided the continent into five "design areas" with widely overlapping boundaries, shown in Fig 1:2. This map seems to represent the significant conclusions of Davidson's study, but in fact it is very difficult to tell how he has arrived at these design areas. Compare the first map with the second. Chevrons are found in four out of five design areas, and their largest concentration forms a zone overlapping the Northeastern and Southeastern areas. Lattices are found in three of the designated areas, criss-crosses in another three, and angular meanders are found only in a tightly localised zone which overlaps the Northern and Western-Southern areas. The other maps showing the distribution of design elements do not show any patterns which correspond more closely to the divisions on the design area map.

The distribution maps are more closely connected with Davidson's conclusions about the historical relationships of the various motifs:

... the distributions suggest that there has been a considerable shifting in design boundaries in the past for, in spite of the simplicity of many of the motifs, we have found cause for suspecting that certain non-contiguous distributions were broken respectively by the spread of other design elements. In respect to designs of the central regions, ... we have noted just such a diffusion in recent years into surrounding areas, presumably at the expense of other patterns. These various considerations imply that there have been many changes in design distributions in the past ... (1937: 138)

An example of this relationship between design elements is the distribution of herringbone designs, found in two tracts in northwest and southeast Australia, but interrupted by the Central area containing concentric circles, which are known to be spreading outwards (Davidson, 1937: Fig.87). Davidson deduced that the herringbone is an older
Fig. 88. Distribution of Various Designs. = Chevron type. |||| Lattice. xx Large criss-crosses. /// Angular meander.

Fig. 1:1 (From Davidson, 1937). An example of Davidson's maps showing the distribution of certain "design elements" which were used in Australian Aboriginal decorative art.

Fig. 89. Approximate Limits of Contemporary Design Areas in Australia. .... Northeastern design area. == Southeastern design area. --- Central design area. ——— Northern design area. ---- Western-Southern design area.

Fig. 1:2 (From Davidson, 1937) This map summarised Davidson's conclusions regarding the geographical distribution of design elements.
design, whose previous distribution was once continuous across the continent.

I feel that Davidson's study is marred by the extremely narrow range of design elements selected for the distribution maps, the separation of the elements from the different objects on which they are carved or painted, and the failure of the maps to show relative concentrations of occurrences. The results are therefore limited, but the structure of Davidson's study suggests many possibilities for further research on the problem of decorative art in Australia. Modern techniques for multi-trait analysis, dependent on punch cards and computers, would make it possible for someone to revive distribution studies with more chance of confirming significant patterns.

In the field of Australian Aboriginal art studies, Mr. F.D. McCarthy has probably done the most research and publication. Because of the large quantity and range of his work, the discussion of some aspects of his methods and conclusions will be postponed to later chapters to which they are more applicable.

McCarthy has become an accepted authority in this field. In several anthologies covering a variety of topics in Aboriginal studies, he has contributed the article to fill the "art" niche. While he was Curator ofAnthropology at the Australian Museum, he compiled two short books, Australian Aboriginal Decorative Art (first edition, 1938) and Australian Aboriginal Rock Art (first edition, 1958), which remain the only really comprehensive publications on these topics, setting out briefly the range of different types of artistic manifestation found in different parts of Australia. The best discussion of the themes and problems which McCarthy identified in Aboriginal art is contained in the article "Theoretical Considerations of Australian Aboriginal Art", which was his Presidential Address to the Royal Society of N.S.W. in 1957. More recently, he has several times attempted to lay down principles, guidelines and methods by which Aboriginal art ought to be studied - for example in "Recording Art on Rock Surfaces" in Australian Archaeology - A Guide to Field Techniques, edited by Mulvaney.

The scope of the original research on Aboriginal art carried out by McCarthy is very extensive in time and space. The biggest projects which
he has published are the detailed recordings of rock art which he has made in widely distributed parts of Australia. In the Sydney area, he continued the work of W.D. Campbell in graphically recording the outline engravings of the sandstone outcrops, and between 1941 and 1960 he published drawings of 122 sites (McCarthy, 1941-54, 1956-59; McCarthy and Hansen, 1958-60). In 1958, McCarthy visited two important locations in Western Australia - Depuch Island and Port Hedland, where he recorded a large number of engravings (1961b, 1962a).

Although most of the motifs found on Depuch Island are figurative, their form is somewhat different to that of the Sydney engravings. Instead of single outlines, most of the figures consist of solid forms, with the whole interior surface removed by percussion treatment. When this process is used on rock that has a weathered outer surface which contrasts in colour with the unweathered interior, the freshly pecked figures stand out clearly against their background surface. On Depuch Island, many of the engravings show up a bright yellow against the orange-brown of the weathered dolerite blocks which cover the whole island.

There are many human figures among them, and a number of compositions showing groups of little stick-men engaged in scenes of hunting, fishing and fighting. Copulation is depicted several times. Compared with the Sydney area, the scale of the Depuch Island figures is generally much smaller. Human figures range from tiny stick-men six inches long, up to four feet. Many of the animals, birds and sea creatures are also depicted in miniature. Among the zoomorphic motifs, there is a wider range of identifiable subjects than in the Sydney area, because many figures include details of body contours or physical characteristics which are not found in the cruder eastern representations. Among the marine animals, one can confidently recognise the distinctive silhouettes of dugong, sperm whales, dolphins and mangrove crabs, and there also appear to be several distinguishable species among the engravings of birds and marsupials.

Although Depuch Island and Port Hedland are only about 60 miles apart, the engravings at these two sites are dissimilar in several ways. At Port Hedland, there is greater variety in the forms of the engravings - some are solid figures, like the Depuch Island carvings, but most of them are outlines and line designs, like those in the Sydney-Hawkesbury area. Most
of the human figures at Port Hedland are of an unusual anthropomorphic type called *Minjibiru* by the local Aborigines. Their limbs are depicted by single, undulating lines, but their hands and feet are shown as solid shapes. The range of zoomorphic motifs at Port Hedland is rather restricted, with a marked emphasis on marine subjects. There are a great many non-figurative motifs, which do not suggest any subject familiar to the European viewer, and a large number of bird tracks, kangaroo tracks and human footprints, which suggest that the Aboriginal artists often represented a subject or an action by the marks which it left on the ground, rather than a view of the subject itself. For example, one common motif at Port Hedland is a cluster of circles between a pair of emu tracks which show the bird's long "heel". This seems to represent an emu sitting on a clutch of eggs, or rather, the mark which this activity would leave on the ground. Of course, in their daily life, the Aborigines have to pay a great deal of attention to tracks and other patterns impressed on the ground, which they are known to interpret very skilfully. Weapons such as shields and boomerangs decorated with complex line designs make up many of the figures at Port Hedland. Most of the figurative motifs are depicted life size, unlike those at Depuch Island, where miniatures and reduced scale depictions are most common.

Until this point in the study of Australian rock art, most people who recorded paintings and engravings had been content to publish their drawings and descriptions just as they stood, for their own sake, and without attempting any kind of analysis. McCarthy's articles on the Sydney rock art had been like this - they contained no apparent intention of working the raw data, or of using it to make inferences about the art (1941-54, 1956-59, 1961a; McCarthy and Hansen, 1958-60).

But when he had recorded large quantities of rock art in remote parts of the continent, McCarthy made every effort to use this detailed material to examine the role of this art in Australian prehistory and Aboriginal ethnography. At Depuch Island, he grouped the engravings into eighteen "styles", according to the visual composition of the figure.

1. Dotted outline
2. Outline
3. Outline with barred interior design
4. Outline with striped interior design
5. Outline with striped broken line exterior design
   
   ....etc. (McCarthy, 1961: 144)
As far as I know, McCarthy was the first person to attempt to classify Australian rock art formally, in more detail than just a simple division into carvings and paintings. He developed a detailed terminology of techniques and styles, which he used in all his publications. I shall discuss this aspect of his work in Chapter 3.

In his article on the rock engravings of Port Hedland, McCarthy tabled the 7051 figures which he had recorded according to technique, style and subject, with complete breakdowns of the number of figures in each category at each of a number of locations (1962b). He amalgamated his styles into three major groups - outlines, linear designs and intaglio designs, and studied the superimposition of these forms on top of one another in an attempt to determine their relative ages.

From this study he built up a three-phase history of engraving at Port Hedland - outlines, followed by linear designs, followed by intaglio designs. After examining other sites he theorised that this sequence could be extended to the rest of the continent, and that it represented the order in which these forms of engraving had arrived in Australia.

Another major site where McCarthy recorded large numbers of rock engravings is Mootwingee, in western N.S.W., where most of the figures are pecked solid shapes, or "intaglios". In this project he collaborated with N.W.G. Macintosh, who undertook the problem of dating the site (McCarthy and Macintosh, 1962).

It is usually very difficult to find concrete evidence for the age of exposed carvings or paintings. There are as yet no scientific tests like C14 which can be applied to rock art, and estimates based on the weathering patterns of the rock itself have so far proved unreliable. Crawford tried to date the engravings at Depuch Island by relative degrees of recolouration to the tone of the original surface. But when he submitted engraved rock fragments to petrological analysis, he found that the colour of the pecked area depended entirely on the depth of the original weathering crust (which varied considerably from rock to rock) and the depth of penetration of the carving. The process of recolouration of the Depuch rocks was so slow that its effect on the carvings was negligible. Therefore, dating by colour proved to be invalid in this case. (Crawford, 1964: 46-51; Trendall, 1964: 83-8).
However, Macintosh decided that, at Mootwingee, (1) the massive fracturing of the sandstone slabs forming the site, which had taken place after the carvings were made; (2) a large tree growing in one of the crevices thus formed; (3) the smaller-scale fissuring of the engraved surfaces, intersecting carved figures in many cases; and (4) indications by an old Aboriginal informant that Mootwingee was not in active use when he was young, but had "entered the realms of Aboriginal prehistory even before European intrusion"; indicated that the practice of engraving at this site had terminated at least 300, and up to 1000 years ago (McCarthy and Macintosh, 1962: 261-5).

Then, taking one of the engraved slabs in the main site at Mootwingee, Macintosh embarked on an heroic calculation designed to show the possible age of the site (265-6). Using a measure of the time which it took them to chalk in and record the figures on Dingo Rock, he multiplied:

the time taken to trace all the peck marks on one figure

X

the number of figures on Dingo Rock

X

a factor of 2$\frac{1}{2}$, because "many of the peck marks are superimpositions over two or more preliminary layers of pecking"

X

a factor of 2$\frac{1}{2}$, representing "planning, draughtsmanship and design"

X

a factor of 5, to account for the greater effort of pecking instead of tracing

= a minimum of 3,125 man-hours to engrave all the figures on Dingo Rock.

There are about 300 figures on Dingo Rock, and a conservative estimate of 2500 figures in the whole site. It was therefore calculated that the whole site represented 25,000 man-hours of engraving time.

... assuming that the making of additional new engravings was a necessary role in annual ceremonies, and therefore assuming that each year 100 man-hours were devoted to engravings, then the total gallery could have been created over a period of 250 years or some ten generations. Such persistent zeal seems idealistic. Allowing for "stand-still" periods or the likelihood that existing engravings
were re-pecked or simply remained ceremonially adequate for periods of time before additional motifs were needed, then this 250 years might logically need a factor of x 4 x or x 5, giving 1000 to 1250 years to engrave Main Gallery. (McCarthy and Macintosh, 1962: 265)

Macintosh therefore estimated that the task of engraving the Main Gallery at Mootwingee began between 550 years (minimum) and 2250 years (maximum) ago.

The reliability of these calculations and even the value of attempting them at all, may be doubted. Macintosh justified himself by asserting that "hypothetical figures derived from practical considerations" were better than random estimates of the age of the carvings, ranging from 100 to 10,000 years (266). The attitude of these authors - that of extracting ideas from the data by any analytical means available - is more valuable than that of the many writers who have simply illustrated "Some Interesting Pictographs near Upper Woop-woop".

While a member of the American-Australian Scientific Expedition to Arnhem Land in 1948, McCarthy made complete scale recordings of painted caves on Groote Eylandt and Chasm Island (1960). A wide variety of figurative subjects are depicted in these colourful paintings, including human figures, animals, birds and a large number of marine species. There are many compositions, predominantly of fishing incidents, showing little men paddling canoes and catching large sea creatures with lines or barbed harpoons. The forms of the motifs are fairly simple - species are recognisable, but not outstandingly realistic, and the range of decorative designs shown on the figures is small. When he published these records in 1960, McCarthy also included detailed numerical analyses of subjects, colours, styles and superimpositions at each of the sites in the area (402-10). These enabled him to show that there had been changes in the popularity of different colours, with bright reds succeeding older figures in purplish-red. On the other hand, the different styles showed no consistent superimposition sequence, except that figures painted in more than two colours tended to be more recent (395-8).

McCarthy had good reason to adopt a systematic approach to the study of this art. His article was published in Volume II of the Records of the American-Australian Scientific Expedition to Arnhem Land, which was titled
"Anthropology and Nutrition". He commenced it by stating:

Most of the literature on Australian cave paintings deals with a selection of the outstanding figures in a particular site. ... One result of the publication of such inadequate descriptions of sites ... viewed from the comparative and chronological approaches, is that only incomplete data are available to the archaeologist, even though in some instances, the description satisfies the social anthropologist or the student of primitive art. (McCarthy, 1960: 297)

Volume I of this series, entitled "Art, Myth and Symbolism", was entirely devoted to the work of Charles P. Mountford, the leader of the expedition. In it, Mountford presented his description of the cave art near Oenpelli, a much more spectacular and diversified body of art than the Groote Eylandt paintings. But Mountford had said:

... I did not try to record all of the many thousands of cave paintings I saw. Instead, I contented myself by photographing the significant single and grouped figures which revealed not only the art motifs but, through associated myths, the beliefs of the artists themselves. My approach to the cave art was that of the ethnologist, not the archaeologist. (Mountford, 1956: 180-1)

Arnhem Land is probably the richest art area in Australia. Traditionally a wide variety of objects, some unique to this area, were elaborately decorated with painted designs, coloured feathers and other forms of ornamentation. The production of bark paintings has increased in recent times out of proportion to their traditional role, at first because of their popularity with museum collectors, but later purely for the souvenir industry. Originally these bark slabs formed the walls of wet-weather shelters, and their decoration with painted motifs was a casual activity. These paintings did not survive the collapse of the shelter at the end of the wet season. Some bark paintings were made by initiated men during secret rituals and used for instructing neophytes in the myths they illustrated, but these paintings were destroyed at the end of the ceremonies (Berndt & Berndt, 1968: 362). Now they are produced almost entirely for sale to dealers.

The traditional art of Arnhem Land is inextricably bound up with other aspects of Aboriginal culture in this area - it is almost impossible to separate the objects themselves from their complicated social context.
Elkin and the Berndts examined the various aspects of the religious/magical/social complex which produces Arnhem Land art as its by-product. They published a short summary of this research, orientated towards its artistic manifestations, in Art in Arnhem Land, but it is also necessary to consider the more detailed anthropological descriptions of the important religious cults given by the Berndts in Djanggawul and Kunapipi.

Without attempting to explain all the connections between them, some of the factors which influence Arnhem Land art are:

1. The division of Aboriginal society into two moieties, called dua jiritja. This is not just a kinship division between two groups of people, but a separation of many aspects of society and culture into two distinct spheres of influence. Myths, religious performances, magic, songs, mortuary rituals, sacred objects, art motifs, decorative designs, colours, items of material culture and animal and plant species are all aligned according to dua and jiritja affiliations.

2. Other kinship groupings which also affect many aspects of artistic expression - e.g. clan membership, which determines ownership of specific motifs and patterns used in body painting and bark paintings.

3. The major myth cycles and their associated rituals. These cults, which are connected with various Ancestral Beings - the Djanggewul brother and sisters, the Wauwelak sisters, Laintjung and his son Banaitja and Kunapipi the Great Mother - are concerned with the theme of fertility and have spread throughout Arnhem Land. Their ceremonies generate the production of many categories of art, including the rangga, which are carved wooden objects, elaborately decorated with painted designs, coloured strings and feathers. Some rangga are made to resemble natural objects, but the most sacred are basically simple wooden poles.

4. The Macassans - Indonesian seamen who visited Arnhem Land during the nineteenth century to fish for trepang. Their extensive contact with the Aborigines influenced a number of aspects of Arnhem Land culture, including some of the art.

The Berndts' studies of the religious cults in northeastern Arnhem Land showed how these various facets of Aboriginal life were integrated. Their
work was based on long periods of fieldwork, and it was framed in the terms of reference of social anthropology.

Mountford's expedition, on the other hand, stayed for short periods at three locations in Arnhem Land - Groote Eylandt, Oenpelli and Yirrkalla (1960: xx1-xxx). He focused his attention on the art, collecting items and recording the "meaning" which the Aborigines assigned to each one. Art, Myth and Symbolism contains a very large number of illustrations of bark paintings, carved wooden figures, decorated log coffins, body designs, decorated pipes, paddles, spearthrowers and rangga, figures made of beeswax, message sticks and cave paintings. Associated with each illustration is an explanation of what it represents, which Mountford ascertained by interviewing the artist who presented him with the relevant object. This approach resulted in a piecemeal collection of stories, myths and descriptions of rituals, which contains no suggestion of the complex, inter-connected web of Aboriginal religious life depicted by the Berndts.

The section on the Oepelli cave paintings is particularly disappointing (109-81). Mountford simply photographed individual figures or groups of figures which appealed to him, and noted the identifications of some of them by Aboriginal informants. This art includes the famous mimi paintings, which are miniature depictions of extremely thin spirit-people who are said to live in cracks in the rocks. The mimi are painted in delicate line-work, and they are usually shown in action poses - running, throwing spears or waving goose-wing fans. These paintings are supposed to be the work of the mimi themselves, not the Aborigines. There are also many X-ray paintings of animals, birds and fish, which display a representation of the internal organs - heart, lungs, stomach, backbone, etc. inside the outline of the figures.

Mountford's illustrations of selected individual motifs are grouped arbitrarily, with no indication of the originals' spatial relationships on the cave wall. Most of the accompanying text consists of a simple description of the anthropomorphic figures and animal species found among the paintings. The following sample was selected at random. (Note also lack of organisation in grouping figures from different sites.)

Figure 20
A shows a man holding a spear and spear thrower. Locality -
vertical face, site 5.

B is a complicated figure in faint red, from the same extensively painted rock-face as Fig-14A. Although it is obvious that the painting represents a human being, it is not possible to identify the various appendages. Locality - site 5.

C represents two figures, one of which is a Munimunigan. The aborigines could not explain the central design. Locality - narrow cleft, near site 5.

D is a Mimi painting in red of one of their own kind. He is sitting down with a multi-barbed spear resting against his shoulder. This decorative figure is forty inches high. Locality - vertical face, site 1. (Mountford, 1956: 122)

Mountford explained his fragmentary approach as that of an ethnologist, not an archaeologist, but it can be seen that the results hardly justify the claim. The Aboriginal informants supplied only bald indentifications of a few of the figures. There is no indication of how the various spirit-beings fit into the local ideology, no explanation of the rôle of the X-ray depictions and other motifs, or any adequate discussion of why the Aborigines painted on the walls of caves at all. Mountford believed that "the Aborigines paint because they want to" (Mountford, 1956: 6). Ronald Berndt, Peter Worsley and Professor Elkin, social anthropologists who had worked in Arnhem Land, all wrote highly critical reviews of Art, Myth and Symbolism. Elkin epitomised their main complaint:

Meaning is not obtained by asking the artist or a bystander what a certain pattern indicates, nor merely by getting the myth it represents. Meaning comes after much travail out of the functional relationship of philosophy, belief, ritual, social structure and the general heritage of culture. (Elkin, 1961: 56)

Nevertheless, all these reviewers praised the quantity and quality of the book's illustrations of Aboriginal art. Only the archaeologist is left disgruntled by Mountford's superficial recording of the cave art of Oenpelli. It is a pity that McCarthy's approach to the study of cave paintings was not adopted for the expedition's research at these important West Arnhem Land sites.

Because the art of Central Australia is wholly non-figurative, the challenge to unravel its symbolism is greater. At least one can see that an Arnhem Land bark painting depicts animals and human figures, even if the specific identification of the characters is the prerogative of the artist. But almost all Central Australian works of art consist of circles, curved lines and dots. These figures are intended to represent
human and mythical beings, parts of the body, animals and birds, plants and features of the landscape. But each element - say, a circle - can represent a variety of subjects in different contexts, and even in the same context, a particular circle can have several meanings simultaneously - it may be a tree and a camp and a waterhole, all at the same time. Bird and animal tracks and human footprints are the only recognisable recurrent motifs in this art. Everyone who has worked in this area agrees that, in order to ascertain even the most superficial level of meaning for any design, one must interview an Aborigine whose social connections place him in the correct position to interpret it.

Granted that specific interpretations can only be obtained from relevant Aborigines, two anthropologists have nevertheless attempted to deduce underlying rules which constitute a representational system in Central Australian art. T.G.H. Strehlow linked the sacred designs of the tjuringa and the ground drawings with the practise of story-telling among the desert Aborigines (1964: 46). He observed that, while relating a story, either sacred or secular, the narrator would also act out the events by marking the ground in front of him. First the sand was smoothed out, often with the flat side of a boomerang. Then the storyteller used his fingers, or the tip of the boomerang, to represent a campfire by a slight circular depression, a seated person by a U-shaped mark, dots for the footprints of a walking person, and so on. As the story progressed, the smoothed area became covered with these marks. Thus, persons, objects and actions were visually represented by the patterns which they impress on the ground surface. A campfire is roughly circular when viewed from above; a person sitting cross-legged in the normal Aboriginal fashion does leave a roughly U-shaped mark, and so on (47).

Strehlow believed that the dependence of the desert Aborigines on tracking procedures gave them the habit of looking at the landscape from a bird's-eye viewpoint, and made them prone to represent it in this way as well. The presence of bird and animal tracks in this art seems to confirm this outlook - that any object can be represented by the marks it leaves on the ground, or by a bird's-eye view, if it is a permanent fixture like a tree or a waterhole (47).

When these patterns were incised on the hard stone or mulga surface of a tjuringa with a possum tooth engraver, closely set concentric circles and
fine parallel lines were substituted for the circular depressions and broad lines of the sand drawings, because these could not be reproduced on the tjuringa with the sharp pointed engraving tool (46). Thus these symbols became elaborate and stylised in their esoteric manifestations.

Nancy Munn, on the other hand, interpreted the elements of Central Australian art - circles, arcs, curved and straight lines, etc. - as extremely stylised depictions of the objects they represented. Thus a circle could be used to represent any objects which have the characteristics of "roundness" or "closedness". In this system of representation, distinguishing characteristics were ignored, in favour of a common identity of general shape.

The individual visual elements, or schemata, thus constitute discontinuous ranges of meaning, because they symbolise a number of different classes of phenomena - waterholes, fires, trees, yams, etc. (Munn borrowed this term from linguistics.) With a discontinuous meaning range, it is possible to increase the number of classes of phenomena to be represented, without inventing new schemata. Thus the Walbiri (the subjects of Munn's study) now depict a billy-can by a circle, because a billy is readily fitted into the visual category of "roundish, closed" forms already represented by circles. (But note also, that a billy put down in the sand would leave a circular mark, and Strehlow would attribute the circular representation to this fact.) The visual representation system of Arnhem Land art, on the other hand, involved continuous meaning ranges, because each schema - e.g. a picture of a turtle - symbolises only a single class of objects - i.e. turtles; even though different species - green turtles, hawksbill turtles, etc. - may be intended, they are all shown by the same schema. The turtle schema could not be extended to represent other classes of objects, like billy-cans (1966: 936-42); See also Fig. 1:3.

The Walbiri also make more elaborate designs - the sacred totemic patterns - which consist of combinations of the simple elements (see Fig. 1:4). Although the individual components have discontinuous meaning ranges, these composite schemata have continuous meaning ranges. Munn illustrated the totemic designs for the wagilbiri tree, a dead man, the walbadì yam, a conical hill and the rainbow snake. These patterns represent these referents, to the exclusion of others. However, Munn believed that the use of the common elements to make up each design had metaphorical overtones
**A. Continuous Meaning Ranges**

**Yirrkalla**

- snake (e.g., lightning snake)
- tree (e.g., casuarina; menin tree)
- mangrove stingray
- devil ray
- tortoise
- turtle (e.g., green; hawksbill)
- yam

**Walbiri**

- snake
- tree
- human
- hill

**B. Discontinuous Meaning Ranges—Walbiri**

- circular path
- waterhole
- fruit (e.g., congaberry)
- fire
- yum (e.g., wabai·)
- tree (base)
- etc.

**Figure 1. Elementary Visual Categories**

Fig. 1:3 (From Munn, 1966) Munn's diagrams illustrating difference between continuous and discontinuous meaning ranges in elements of Yirrkalla and Walbiri art.
which were significant for the totemic system as a whole. She found that the designs also shared a common visual structure, which was related to the physical structure of the referent. Each can be divided into a central unit, consisting of circles and straight lines, and peripheral units, which consist of a variety of elements. In the table shown in Fig. 1.4 the "core" of the wagilbiri tree is its roots, shown by a circle, and its trunk, shown by straight lines. The branches, branch tops and leaves, shown by various design elements, constitute the "adjunct". This organisation can be applied to all the other designs (942-3).

This classification is reinforced by an explicit Walbiri metaphor. Walbiri equate the elongate parts with the paths of these totemic beings (tree trunks and yam stems, for instance, are also ancestral paths), and all the roundish parts with their camp sites (for example, the yam tuber is the camp of the yam). (Munn, 1966: 944)

Munn then compared this use of visual structure with a pattern which Lévi-Strauss observed in the ritual chants of the Osage Indians which described totemic animals belonging to clans.

Thus, as the Osage chants the puma asserts that he has black feet, a black muzzle, and a black tail. According to Lévi-Strauss, all the other totemic animals and birds are similarly described, and items such as beaks and noses are equated. The different totems are in effect broken down into a set of corresponding parts: the muzzle or nose-like parts, including the bear's muzzle, the eagle's beak, and other such items; the feet-like parts, including the bear's feet, the eagle's claws, and so on. In addition, all these items are said to be black, a feature that (because of certain symbolic associations important to the Osage) is stressed as being common to all the animals.

On the one hand, each of these totemic species is distinctive and functions as the symbol of a particular clan; on the other hand, each can be analysed into a set of parts shared with the other totemic animals and intersecting these species differences. As Lévi-Strauss points out, there is "a sort of ideal dismemberment of each species that re-establishes ... the totality on another plan" (1962: 195).

Much the same may be said of the Walbiri designs. On the one hand, totems of different species can be represented by contrastive designs. On the other hand, a common structure and shared visual categories intersecting these differences reorder the different species in terms of a common pattern. ... A construction of the core-adjunct type can in theory be used to represent any totemic species, which could thus be analysed and reassembled in the terms
I have described.

... The design structure that I have described also meshes with Walbiri cosmology. Walbiri regard each major totemic ancestor as an individual with a particular set of locale associations; the individual belongs to a species, and a cluster of attributes ... stereotypes each species, marking it off from others. But all species of ancestors also share certain important attributes: for example, all made camps and left track-marks in the country. These shared attributes are criteria of the class of totemic ancestors. ... To the extent that the design structure conveys an organisation inherent in the cosmology, the designs function as visual models that present these principles, as it were, directly for inspection. (Munn, 1966: 945-6)

In other words, all totems are different, but all totems share common attributes, and this fact is inherent in the visual structure of their totemic patterns. Each design, as well as representing its own particular totem, also embodies the wider concepts of Walbiri ideology.

If this analysis is correct, then the use of non-figurative motifs (or schemata with discontinuous meaning ranges) is essential for the dual function of these Central Australian designs, and this duality could not operate in figurative art, say, in Arnhem Land. There are many features which distinguish the desert religious systems from those found in other parts of Australia; it seems that non-figurative art may be one aspect of this distinction.

Berndt made a similar point in his article "Some Methodological Considerations in the Study of Australian Aboriginal Art" (1958b). He detected "a certain degree of 'fit'" between Aboriginal social organisation in eastern and western Arnhem Land, and in Central Australia, and the widely differing art styles practised in these regions (39). Of Central Australian Aborigines, he wrote

We could say, perhaps, that their art style, composed as it is of simple combinations of circles, semi-circles, spirals, concentric circles and lines, expresses the relative homogeneity of their society, the compactness of its structure, the intimacy of relationship among those within it, the essential conservatism and traditionalism which was a dominating feature in 'desert' social living. (Berndt, 1958b: 40)

Phrased in this way, the concept sounds a little romantic, but Munn's
**Fig. 1:4 (From Munn, 1966) Examples of Walbiri designs which Munn dissected into "core" and "adjunct" elements to show their common visual structure.**

<table>
<thead>
<tr>
<th>Tree</th>
<th>Core</th>
<th>Adjunct</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>uggilbiri tree</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dead man (njunu)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>small yam (uokadj)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conical hill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rainbow snake (wegere)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 1. CORE-ADJUNCT CONSTRUCTION**

<table>
<thead>
<tr>
<th>Core</th>
<th>Adjunct</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREE</td>
<td>TREE</td>
</tr>
<tr>
<td>(uggilbiri)</td>
<td>tree roots (and branch junctures)</td>
</tr>
<tr>
<td>HUMAN</td>
<td>HUMAN</td>
</tr>
<tr>
<td>(dead man)</td>
<td>buttocks</td>
</tr>
<tr>
<td>YAM</td>
<td>YAM</td>
</tr>
<tr>
<td>(small yam)</td>
<td>yam tubers (hills)</td>
</tr>
<tr>
<td>HILL</td>
<td>HILL</td>
</tr>
<tr>
<td>(conical)</td>
<td>hill</td>
</tr>
<tr>
<td>SNAKE</td>
<td>SNAKE</td>
</tr>
<tr>
<td>(rainbow snake)</td>
<td>snake's body</td>
</tr>
<tr>
<td>CAMP</td>
<td>CAMP</td>
</tr>
</tbody>
</table>

* Slightly simplified from the original.
systematic comparison of the structure of Walbiri designs and the structure of desert totemism does create a sense of 'fit' between these two cultural elements.

The essential features of Strehlow's and Munn's ideas about this art do not contradict each other, and their contributions could usefully be combined. Strehlow's comparison with tracking and sand drawings provide a possible source for the basic schemata used in Munn's analysis. After all, Central Australian ideology is always quite happy to incorporate several levels of meaning in any one manifestation.

Andreas Lommel deserves some special attention because he is one of the very few writers to set about constructing a framework of Aboriginal art styles and to attempt to explain the origins and sequence of these styles in Australia. My impressions of his theories are based on a translation of the final chapter of Die Kunst Des Fünften Erdteils Australien (1959) and on his article, in English, "Rock Art of Australia" in The Art of the Stone Age, by H.G. Bandi et al. (1961). These two items correspond very closely.

Briefly, his conclusions were as follows. There are two kinds of art in Australia - naturalistic and geometric. The former is more recent, because it is found only on the northern and eastern periphery of the continent, and it is the result of some external stimulus (Lommel, 1961: 208). The northwest must have been the point of entry for this style, because the naturalistic art in the southeast is much poorer in quality - i.e. it has lost something in travelling through Australia (228). Another fact which points to the northwest as the original location of naturalistic art in Australia is its use in decoration as well as on rock surfaces in this area. However, in Arnhem Land, the older geometric style has been preserved in a ritual context, and it is even now overpowering the intrusive naturalistic style, which can be seen to be losing its vigour in the most recent paintings (229).

Unfortunately, these conclusions were not based on any archaeological technique other than inference from geographical distribution. Lommel's arguments were based on his perception of the relative aesthetic qualities of different Australian rock art styles. He used value judgements about their artistic merits, combined with a preconceived and unsupported idea
of what happens to an art style when it travels in time and space, to place these styles in a sequence and postulate patterns of diffusion.

For example:

Anthropomorphic representation spreads outwards from the Kimberleys and Oenpelli. (1961: 228)

The Kimberleys and Oenpelli are only two points in a continuous area of figurative art which stretches from Depuch Island and the Pilbara area to Groote Eylandt. There is no specific evidence why these places (the Kimberleys and Oenpelli) should occupy...

... a special position as centres from which foreign influences were transmitted to the rest of the continent. (1961: 228)

In the south-east... the rock pictures never attain the same level of artistic accomplishment as do those of the north-west. ... The large anthropomorphic figures... are found in combination with primitive animal figures and are clearly degenerate forms of a more advanced art, probably the older style with the small figures (mimi stick figures in western Arnhem Land and "Bradshaw" figures in the Kimberley - L.M.) (1961: 228)

We can deduce that the northwest is the gateway of the anthropomorphic style not only for geographical but also for stylistic reasons... An examination of individual forms of representation of human figure in rock painting in Australia shows that movement and profile representations are limited to few centres in the extreme north, and can be found in the southwest and southeast only in a stunted and misunderstood form. (1959: 145)

The context indicates that, in these passages, the term 'degeneration' is intended as value judgement. It implies that the relative dates of different examples of certain motifs, and the direction in which they have been diffused, can be deduced from the operation of a process by which their artistic qualities diminish. Archaeologists and art historians have recognised that the schematisation of a particular motif may indicate a sequence among the various situations in which it occurs. But schematisation involves the progressive and systematic alteration of a motif; usually a figurative one which by degrees becomes non-figurative. A complex motif may be dissected into its component design elements, which may be simplified, re-arranged or selectively discarded or multiplied.
The final form is quite unlike the original, although the process of transformation can be charted through the intermediate versions. A well-known example is the series of ancient British coins displaying schematic designs progressively devolved from Classical Greek models which was illustrated by Clark in Archaeology and Society (1960: 135); he even used the term 'degeneration' for this process, but without the disparaging overtones present in Lommel's discussion. The Australian motifs to which the latter refers do not exhibit the operation of any recognisable schematising process. The simple outline engravings of humans and animals on the east coast are not so complex as the same subjects among Arnhem Land cave paintings of mimi figures or X-ray motifs, but they are not "degenerated" from the latter - they merely display a different method of visual composition, using mass rather than line-work. There is no evidence, in these terms, for the direction of the spread of naturalistic motifs.

Similarly, Lommel's comment on profile representations and the depiction of movement: it is a very personal, or perhaps an ethnocentric viewpoint that these characteristics are especially desirable, or that they represent a finer quality, or closeness to the point of origin. Their presence in one place and absence in another may point to different episodes in the art history of Aboriginal Australia, but it does not justify any further inference.

It must be noted that in our time the human figure style on the bark paintings of the north is clearly more and more forced back by a geometric style whose main motif is generally the lozenge, but also includes the herringbone pattern. The ceremonial style of the bark paintings of Arnhem Land, which is distinguished from the "ordinary style" first and foremost by the geometric motifs, appears here to have preferred geometric ciphers. When these motifs occur on the northern periphery of the continent - above all the herringbone pattern and the rhombic pattern - they must be the older ones, as they are the ritual ones. It is obvious that they not only took over the place of the anthropomorphic and zoomorphic representations, but now gradually overwhelm it. The old ceremonial motifs have prevailed and the naturalistic-objective style is transformed into the geometric-linear one.

Perhaps we can conclude from this that the naturalistic style is less akin to the Australian tradition than the geometrical, and that the latter is powerful enough to prevail even to the present day. We must not lose sight of the fact that the use of the geometrical style on bark paintings clearly indicates a flagging of artistic energy. The driving force behind the
creation of not only human figures but actually any buoyant representation diminishes and all forms of art which are not propelled by verve take the form of schematically drawn geometric motifs. (1959: 154)

The last part of this conclusion is so much pseudo-art history. The first paragraph, which asserts a sequence of art styles in Arnhem Land -

1. geometric; 2. naturalistic, with the older geometric forms preserved in ceremonial contexts; 3. geometric forms overpowering naturalistic in ordinary art - depends on the assumption that art forms incorporated in religious rituals are automatically old ones, and, by implication, that rituals are the most deeply rooted and "oldest" parts of any culture. This is not necessarily true. Social anthropologists have discovered that, in central and northern Australia, religious rituals and their associated motifs spread rapidly from place to place, and even the most sacred performances of a group may be one of the most recent imports into its culture. Current examples are the Kunapipi rituals in Arnhem Land (Berndt and Berndt, 1968: 139, 201, 384) Gurangara in the Pilbara area (224; Wright, 1968: 53-4), and "Red Ochre" in Central Australia (Edwards, pers. comm.). Ritual art is not necessarily old art.

His use of geographical distribution of Australian rock art styles makes the model of their history which Lommel has presented plausible, and it is regrettable that his evidence for it is all based on a personal interpretation of aesthetic qualities found in the different art areas. But if archaeological methods and evidence could be applied to the material, then the main points in Lommel's scheme might be worth re-examination. The most eligible aspects of it are: that Australian art can be divided into figurative and non-figurative styles; that the figurative art may be the younger because of its peripheral distribution; that the northwest coast may be a point of entry for certain complex figurative styles. I intend to return to these points in the last part of this thesis.

The first book to be wholly devoted to the rock art of one part of Australia is Crawford's The Art of the Wandjina published in 1968. The spectacular Wandjina paintings of the Kimberley region are possibly the best known cave art in Australia. They were first discovered by the explorer, George Grey, in 1838 (Crawford, 1968: 62-8). A Wandjina is a
large-scale painting of a complete human figure, or a head and shoulders without the rest of the body. A dense white background is painted onto the whole surface on which the figure is to be drawn, and then its outline is delineated in red. This means that, when it is complete, there is a whitened zone peripheral to the figure's outline which gives it a 'haloed' effect. The face is the most prominent feature. The eyes and nose are shown, usually in black, but never the mouth. There is a variety of decorative features on and around the head, and red, yellow and black are used over the white background to depict a "halo" around the face, lines radiating from the head, fringes around the eyes, and other detailed ornamentation. If the whole body is shown, the shoulders and upper chest are separated from the rest by a horizontal line, and this enclosed "bust" is usually plain white. Below the line, the body is filled in with thin red stripes, and there is a solid black oval in the middle of the chest. The shape of the body and limbs is massive, and there is no anatomical indication of sex. This detailed anthropomorphic schema has been repeated many times in many sites spread over a wide area, with very little variation in its form.

Grey published his sketches of the figures which he had discovered. He "Europeanised" the style of drawing, and wrongly depicted a number of details which were taken to be accurate by later commentators. One of his figures seemed to be wearing a long robe, and a turban with cryptic lettering on it (Crawford, 1968: 64 and 66). These features contributed to a popular view that the Wandjinjas had been painted by foreign visitors to Australia. Sumatrans, Red Sea merchants, the Phoenicians, shipwrecked Japanese sailors and Hindus were suggested as the artists (66-7).

Both Elkin (1930) and Crawford have re-located the caves where Grey sketched his figures, and they have determined, beyond any doubt, that the paintings closely resemble the Wandjinjas found all over the Kimberley area. The strange features in Grey's drawings arose from his misinterpretation of the peeling paint on the figures.

An important point in establishing the Aboriginal authorship of the Wandjinjas is their rôle in the local mythology, which has been investigated by several anthropologists. In general, the paintings represent ancestral spirits who travelled across the country, creating the flora, fauna and geography of the Kimberley. Then each Wandjina entered a cave, lay down
against the rock wall, and sank into it, thus creating the originals of the paintings which are now visible. It was the duty of the leaders of the Aboriginal group associated with each site to repaint the Wandjinas each year - this rite was carried out at the end of the dry season, and it was supposed to be the cause of the onset of the wet season, which follows shortly afterwards. The Wandjinas are connected with rain in many ways, and they seem to be generally responsible for the fertility of the people and the land (Crawford, 1968: 31-7).

It is interesting that the local Aborigines do not claim to be the original artists of the Wandjina paintings, although they do re-touch them. Crawford found that there are a few indications of some non-Aboriginal influence in the Kimberley region. Some of the myths refer specifically to beings called Kaiara, who arrived on the coast in a cyclone, and these spirits were invariably connected with very rough weather (69-80). A set of paintings which were identified as Kaiara "children" show human figures in a rowing boat (Fig. 61), others in a sailing ship (Fig. 62), and some who are smoking pipes (Fig. 64). But the figures identified as the Kaiara themselves are identical in every respect with the Wandjina paintings.

On the other hand, the Wandjina paintings are often surrounded by other figures which are within the range of usual Aboriginal subjects - human beings, animals, snakes, plants and other motifs. The style of these is very similar to that of the Wandjinas, and there is no real reason to suppose a foreign authorship for any of the paintings in this area. Crawford admits the possibility that Asian or European contact stimulated the production of at least some of the Kaiara paintings and influenced the local myths. After all, Tasman was in the area in 1644, Dampier forty-four years later, and there were numerous other European landfalls recorded during the eighteenth and nineteenth centuries. Some ships were wrecked on this coast by cyclones. Crawford observed that:

Dampier scared the Aborigines by beating his drum and Stokes fired a flare rocket one night with a similar result.

We do not know ... how the Aborigines explained the noises and flashes of light produced by the foreigners. ... But thunder and lightning were phenomena they knew, and they may well have explained the activities of the Europeans in these terms and thus seen the intruders as supernatural beings. (Crawford, 1968: 80)
Crawford's book is primarily a popular introduction to the Aboriginal culture and rock art of the Kimberley region, and it does not contain the kind of detailed information which is needed for comparative studies. It includes illustrations and comments about many types of local Aboriginal art besides the famous Wandjinjas, and a number of myths, descriptions of rituals, anecdotes, historical background and other relevant material. But it does not contain any complete drawings of whole sites, records of how many figures are present and of what kind, distribution maps, comparison with related art in other areas, nor any indication of the scale of the figures illustrated. In short, it is not (nor was it intended as) a scientific report on the Kimberley rock art. This region and Western Arnhem Land are areas whose cave art has been the subject of many publications, but none in a form that can be used for subsequent analysis by other researchers.

The title of Kupka's book on Aboriginal art in Arnhem Land, *Dawn of Art* (1965), was not intended as a metaphor. Kupka believed that by going to Arnhem Land and studying the conditions under which Aborigines create works of art, he, with the special insight of an artist, could best determine how prehistoric men were first inspired to paint and carve.

This book is one of the best presented works on Aboriginal art, containing many excellent colour photographs of bark paintings and other Arnhem Land art forms, but, unfortunately, the text is a reversion to the Victorian doctrine of Evolutionism.* First the Aborigines are established as the equivalent of man's earliest ancestors. This is because they and their culture are pure, a quality which Kupka equates with closeness to primordial origins.

* As *Homo sapiens* was zoologically at the peak of the animal kingdom, so Western Europe in 1870 marked the goal of civilization. As the single cell was the hypothetical starting point for evolution, so a savage hovering on the border of bestiality must serve as the point of origin for culture. Since, however, that primeval man could no longer be observed, modern savages were lightly substituted insofar as they differed from Victorian Europe. (Lowie, 1937: 23-4)
An example of a pure society is provided by poor, almost forgotten men, who have nevertheless contrived to preserve their vitality in what is for us a totally anachronistic way of life: the Aborigines of Australia, an "ancient" people, perhaps the most "ancient" we can know. (Kupka, 1965: 20)

They have the slim, graceful limbs characteristic of an old, pure race (26)

After successive intermarriage of Australian Aborigines with white or yellow races, the colour becomes progressively lighter, and the morphological characteristics of the pure Australoid race show no signs of reappearing ... (it is possible that) the Australoids are a kind of "pre-race" similar to the groups from which modern races were derived. (27)

These ritual and artistic activities have survived down to our own day in all their traditional purity (54)

Then follows a comprehensive description of the forms of art in Arnhem Land, the artistic techniques and the circumstances in which the items are made and used, and Kupka's comments on their artistic qualities (Chapters IV-VIII). Threaded through this ethnographic material is the theme that the origins of this art are primeval. For example, on page 65, the practice of bark painting must be ancient, because it incorporates motifs which are also found in rock carvings and paintings. There is no evidence that all rock art is ancient, although Kupka asserts that it is. Nor would this preclude the possibility that motifs could be transferred from one medium to another. Kupka does not seem to realise that it has been collectors like himself who have stimulated the large scale production of bark paintings in this area. In fact, this alteration in the role of bark paintings could well have produced major changes in this art form. (Some of the minor changes are well-known - the omission of genital organs from recent examples is in the interests of European taste.) Kupka's argument depends entirely on assertion and on repetition of evocative phrases like the examples already given.

The theory of unilineal cultural evolution is now rejected by anthropologists (see Lowie, 1937: 22-8). The economic basis of Aboriginal society may be analogous to that of Paleolithic hunter-gatherers, but this is no guarantee that other aspects of contemporary primitive cultures do not have a history of development as long as those of contemporary industrial societies. Aboriginal art should not be denied its own history of evolution and influence; it is extremely
unlikely to be an intact survival from prehistoric times.

Kupka's conclusion about the message of Aboriginal art is not at all earth-shattering.

If Aboriginal art in its raw purity can offer us any kind of confirmation of this, then the reply to the questions, "When, how, why was art born?" can only be: "Man has always used art voluntarily and consciously, spurred on by his instinct, to communicate." (178)

In fact, most of the books on Aboriginal art are, for various reasons, unsatisfactory to the serious researcher, while the best material is located in journal articles which are necessarily shorter than a book, and less well illustrated. One such is an article by Maddock on Aboriginal imagery and social structure, as demonstrated by two cave painting sites in southern Arnhem Land (1970). These paintings are located in territory belonging to clans of the jiritja moiety of the Dalabon tribe, and Maddock's informants included members of these clans (446).

He made an important point, which is not always appreciated by those who enthuse over Aboriginal interpretations of parietal art.*

Most of the paintings (in the two sites) can plausibly be regarded as antedating living Aborigines. It may therefore be objected, to any attempt to explain the significance of the images, that there is no reason to suppose that they had the same meaning to their creators as they do to men of the present. In reply to the objection it may be said that I am not investigating the relation of the imagery to the culture of the painters; I am investigating its relation to the culture of living Aborigines who may or may not be descended from and culturally akin to the painters. (Maddock, 1970: 449-50)

Maddock discussed the complex implications inherent in the names given to the two sites by his informants, their explanations of the identity of the central figures, the mythology and ritual connected with these characters, and how these could have influenced the actual appearance of

* For example, Ucko, who used the A.I.A.S. Newsletter to call for more research with Aboriginal informants in order to throw light on European Palaeolithic cave art by extending "the range of possible reasons" for decorating rock surfaces. (1967: 44-53).
the painted figures, and several possible explanations for the relationship between the central and the peripheral paintings at each site. Like the Berndts, he drew on his wider knowledge of Dalabon social structure and religious ideology, which he had studied during a period of fieldwork among this group. The result is a comprehensive and reasonable picture of the rôle of these paintings in the Dalabon culture.

It seems, therefore, that the most useful contributions to the study of contemporary Aboriginal art have been made by social anthropologists, who generally integrate various aspects of a culture in the discussion of some particular manifestation. It is clear that traditional Aboriginal art is, basically, a by-product of certain complex workings of the social structure in which it exists. It is, therefore, not very illuminating to study it on its own, like Mountford, or to use it to demonstrate an extraneous theory of cultural origins, like Kupka.

This completes my selection of noteworthy research workers and their publications in this field of study. Some have contributed to the subject; others have probably contributed to John Mulvaney's view of the subject.
Chapter 2

The Archaeological Study of Aboriginal Art

From Ethnographic to Prehistoric

Ethnographers study the cultures of societies which make no use of writing. Members of a primitive society can provide a verbal explanation of their cultural behaviour and of the material culture that they produce and use. The ethnographer supplements this with his own observations. But when the pre-literate society belongs to a remote period of time, and has no living representatives, its ethnographer turns into a prehistorian, who uses archaeological methods instead of ethnographic ones to deduce information about its culture. Where verbal communication and observable behaviour are lacking, the materialised culture of the society becomes more important as a source of evidence, so that the main aim of prehistoric archaeology is to find this material culture and to organise it into intelligible patterns so that it provides information.

Ethnographers and prehistorians both study Aboriginal art. Because of the historical circumstances of settlement, Australia presents a continuum of Aboriginal societies, ranging from the almost coherent primitive cultures in the Northern Territory, which still produce many art forms, to the totally prehistoric cultures of the southeastern coast and Tasmania, where art exists only as an archaeological relic of which the owners are now extinct. In between are many areas where rock art is found, or decorated art objects have been collected from Aborigines for museums, but an ethnographic account of the cultural associations of this art cannot be given because of some historical disturbance of the Aboriginal communities who manufactured it. So much of Aboriginal art is, in varying degrees, and for various reasons, prehistoric. This fact is not often recognised. Most writers refer to "Australian Aboriginal Art" as if it all belonged to contemporary Aborigines. The following examples show the different degrees of association between art in Australia and living groups of Aborigines.
Rock art is best for comparative purposes, because it is not altered by modern factors like the souvenir industry, which dominates the output of, for example, bark paintings in Arnhem Land. In northern Australia, cave paintings do still play some part in some traditional Aboriginal cultures, in Arnhem Land, the Kimberley and the Central Australian desert. There are a few accounts of paintings that are periodically retouched in the course of ritual performances which are still carried out by living Aborigines. The film, *Walbiri Ritual at Gunadjari*, which was made by the Australian Institute of Aboriginal Studies shows this repainting taking place at a sacred site in Central Australia (Sandall, 1969). There are very few references to new cave paintings being executed by Aboriginal artists in recent years, but one known case is the large composition of the Lightning Brothers at Delamere, in the Northern Territory, which was completed some time in the 1940's by an old Aboriginal man (Arndt, 1962a: 169-70). In 1966, Gould observed two Western Desert Aborigines painting (with crushed charcoal and kangaroo dung) an elaborate sacred design on the wall of a rock shelter at a named totemic site in the Rawlinson Range, Western Australia. This action was not prompted by Gould's presence, as they had commenced the painting before he actually encountered them (Gould, 1969: 147-8). Throughout the desert and the North-west, particular sites can still be interpreted by men who have had an active association with them, and can describe the myths and rituals which explain the presence of the paintings even though these are no longer added to. One example is the "Nagorkun-Narlinji Cult", associated with the "Sickness Place", a group of caves in the central Arnhem Land plateau which contain many paintings depicting characters in the Sickness myth. This legend, the relevant rituals and the identity of the cave paintings were told to Arndt by men of three generations of one Aboriginal family which is particularly identified with the Sickness Place (Arndt, 1962b).

In contrast to this, north eastern Queensland is one example of many parts of Australia where Aborigines are still living close by large concentrations of impressive rock art, but know very little about it. In this area, extreme disturbance of their culture and physical re-arrangement of the population, has resulted in almost complete ignorance on the part of the younger generation regarding many aspects of traditional culture, including art. At the same time, the older men have been removed from their tribal areas whose traditions they know, and it is extremely difficult to locate an appropriate man to interpret a particular site. Trezise, who has been
studying Cape York rock art and working with Aboriginal informants, has collected many myths which relate in a general way to the whole area, but he has not been able to find informants who have special relationships with particular art sites (Trezise, 1971:9).

Around the major areas of early European settlement, virtually no descendants of the Aboriginal groups who originally inhabited them have survived. These districts were depopulated before any serious effort was made to record details of the natives' culture. Historical records made by the early settlers contain incidental material about Aboriginal population, economic activities, material culture and quaint customs; these things being easily observable without any special ethnographic effort. However, there is very little information about the more inaccessible religious and social structure and the relationship of art to these aspects of Aboriginal culture. Sydney is the centre of a large area containing many thousands of important rock engraving sites. Although the practice of engraving continued into the colonisation period, the only known statement by a Sydney Aborigine regarding the function or significance of these carvings is Gooseberry's fatuous comments (see Chapter 1, page 4). The Sydney rock carvings, some of which are less than 200 years old, are prehistoric.

A different situation is shown by the following description of a visit made by Mountford to prehistoric rock engravings in Red Gorge, Deception Creek in the northern Flinders Ranges, South Australia. He was accompanied by several old men of the local Adnyamatana tribe.

When C.P.M. (Mountford) visited the Gorge in 1937 he intentionally did not tell his aboriginal companions the object of the visit. As the party walked along the floor of the Gorge the aborigines passed group after group of clearly defined engravings without apparently having seen them. Even when their attention was drawn to some engravings and they were asked, "What are these things?" the old men, after a casual examination said, "Oh, they're just marks in the rocks" and walked away. Later when the resemblance between some of the engravings and the tracks of kangaroos, emus, lizards and so on, was pointed out, the natives were most surprised and searched enthusiastically for additional examples. But even though they agreed that the marks were not the result of natural agencies they were definite that no aboriginal had made them. This ignorance of the rock engravings by aborigines was surprising because, as young men, they must have often hunted for wallabies and other game among the rocks of Red Gorge. (Mountford and Edwards, 1964: 849-50).

Some may feel that these old men, by protesting complete ignorance of the
carvings, may have been misleading Mountford. But their denial of Aboriginal authorship of the carvings fits in with an attitude found throughout the Central Australian area. Edwards, who has visited many sites in Central Australia with Aboriginal informants, recorded the following discussion:

Independent and repeated questioning of the three informants, two of them, Kummintjarra and Migenteri, old men of considerable importance in their tribe, brought the same response to questions about the origin of the engravings. They consider these to be a part of the "dreaming" site and claim that they were made when the site was "created". Any suggestion of the living people of present or immediate past generations having made the engravings was met with surprise and incredulity. The aboriginals denied any knowledge of the living people having anything at all to do with making the engravings and insisted they they formed an integral part of the ceremonial site and "have always been there". (Edwards, 1966:36).

These engravings are therefore prehistoric. As the circumstances of their manufacture appear to have been forgotten, there is no guarantee that contemporary Aboriginal explanations of their significance bear any relation to the original artists' intentions or representational systems.

An even more complete separation from any Aboriginal identification was the fate of simple wall markings in Koonalda cave on the Nullarbor Plain. Parts of the limestone walls of this underground cavern are extremely soft, and 20,000 years ago, people who entered the cave to quarry veins of flint made simple patterns with their fingers, and scratched grooves with chips of rock. Only a few of the markings are composed into regular designs - several lattices, groups of parallel lines, a herringbone pattern and two circular figures (Maynard and Edwards, 1971). This art is dated by association with the quarrying, which is delineated by several C14 dates and by other circumstantial evidence (76). Although the Aborigines' Pleistocene predecessors entered Koonalda, it was shunned in recent times. Daisy Bates wrote that the tribes who inhabited the Eucla area hardly ever entered the Nullarbor Plain, and that they feared the underground caves which they generally avoided (see Wright, R.V.S., 1971: 11-14). Koonalda is, in a sense, the most prehistoric of all the Australian rock art sites.

So, to coin a horrible phrase, Australian rock art comes in varying degrees of prehistoricity. Ethnographic studies which correlate various forms of art, myths and beliefs, rituals, and the social structure of those Aboriginal communities which still practise these as a coherent whole, are,
therefore, possible and desirable in northwestern and central Australia. Over most of the continent, where studies of this type are not possible, archaeological methods must be applied in order to derive any information from the many concentrations of prehistoric rock art.

The techniques of analysis which the art prehistorian applies to this material are essentially the same as those which any archaeologist uses to organise prehistoric artifacts into intelligible patterns which yield information about their owners' culture - typological studies, absolute and relative dating, distribution studies, etc. Before proceeding to discuss these methods, and to describe how successfully they have been applied in Australia to date, it is useful to look at one more aspect of contemporary Aboriginal art, namely, the circumstances in which different kinds of art are manifested in the community, and their likelihood of survival in the archaeological record.

**Forms of Aboriginal Art**

European prehistorians divided Upper Palaeolithic art into two major groups.

1st. That which is found emblazoning the walls of natural caves. 2nd. That which is found drawn on bone and stone in the cave deposits, accompanied by dateable stone implements (Art mobilier).

(Burkitt, 1921: 192)

The second was used to date the first. The Australian descendants of "cave art" and "art mobilier" are the terms "rock art" and "decorative art", and into these two categories all Aboriginal art has usually been divided. This dichotomy was first used in the 1930's by Davidson in his two major articles for the Memoirs of the American Philosophical Society - "Aboriginal Australian and Tasmanian Rock Carvings and Paintings" and "A Preliminary Consideration of Australian Aboriginal Decorative Art". McCarthy made the same division of his subject matter in his two books produced for the Australian Museum - Australian Aboriginal Rock Art and Australian Aboriginal Decorative Art.

Although it includes two different techniques of making an impression on rock - painting with ochres and incising the surface - the term "rock art" does describe a single artistic unit. Both paintings and engravings are
strictly two dimensional, as the engravings virtually never include true relief modelling* and their form is limited only by the size of the suitable available surface, and is not markedly affected by its shape and texture, as, for example, a wooden statue is limited by the shape and grain of the original log, or a decorated basket by the materials used.

"Decorative art", in the Australian literature, is applied to everything which is not "rock art". It therefore incorporates too many different concepts. I would prefer to use "decorative art" for ornamentation applied to manufactured objects which also have a practical function, such as spears, shields, spearthrowers, containers, baskets, paddles, bullroarers, coffins, etc.; even if the most elaborately decorated objects are likely to be used in ceremonial circumstances rather than everyday activity. Some highly decorated objects, such as the Tiwi painted spears, are made primarily for ceremonial display, with no intention of ever using them for practical purposes (Hart and Pilling, 1960: 48-9). But the main aspect of their form is derived from an object which does have a practical function - i.e. an ordinary spear. Therefore the Tiwi spears are still "decorated" spears.

On the other hand, the Australian Aborigines also make other objects which have no supplementary function, but are objet d'art. Bark paintings, cult statues, ground painting and sculpture, body painting and other ceremonial regalia fall into this category. This is not to say that these objects have no function, but that their function resides in their carved or painted elements, and not in anything else. A basket can be used to carry food, whether it has decoration on it or not, but a bark painting cannot be used to instruct initiates unless it is painted. Therefore I would suggest the formal classification of Aboriginal art into rock art, decorative art and objets d'art (or any better English phrase for this last category).

Another way of looking at art produced by Aborigines is in terms of their traditional way of life. One factor which dominates the type of art that can be manufactured by the Aborigines is their nomadism. This life style discourages the production of large wooden statues, masks or other large permanent objects, because there are no settled communities to maintain

* The exceptions are certain motifs carved in the soft sandstone walls of caves in the Carnarvon Ranges, central Queensland, which appear to be fully-sculptured representations of the vulva (Clegg, pers. comm.).
them, or buildings in which to store them. Aboriginal art, therefore, has to fit into one of three categories which compromise in different ways with its owners' nomadic habits.

The first is parietal art, which is worked on the surface of a natural object. Although this term originally described art on a vertical wall, it can usefully be extended to mean art done on the surface of permanent natural features, such as horizontal or vertical rock outcrops and on trees. Engravings on rocks or tree trunks, and painting in caves may need to be maintained by periodic retouching, but their location is almost completely permanent and naturally protected.

Portable art consists of objects which can be easily carried. Decoration on weapons and other equipment is included in this category, and also the small sacred objects like the Central Australian tjuringa, which are carried about by the men. Tjuringa are also kept in storage, usually in clefts or caves in rock outcrops, but these are transported when necessary, to and from ceremonial grounds, or they may be handed over by their owners to a friendly group who are allowed to carry them away to their own territory (Spencer and Gillen, 1899: 133-6). They are best classified as "portable art".

A large part of Aboriginal art, however, is not designed to exist in permanent form at all. Many items of temporary art, no matter how elaborate, are destroyed, dismantled or discarded after they have been used for one occasion. This is the fate of ground drawings, (Spencer and Gillen, 1912: 406), body decorations, the complex ritual equipment made of thread and featherdown by the Central Australian Aborigines, and even the bark paintings and most of the wooden sculptures used in the Arnhem Land cult ceremonies (Berndt and Berndt, 1968: 362; 370). Many objects in museums are "fossilised" examples of temporary art, which were never intended to have such a continued existence.

All Aboriginal art could be grouped into these three categories - Parietal, Portable and Temporary. It is easy to project a parallel with the Late Paleolithic art of Western Europe - also the work of hunter-gatherers, presumably nomadic. Parietal art survives in the caves and rock shelters, and portable ("mobiliary") art, when it is manifested in stone and bone, has been found in archaeological deposits, but any prehistoric temporary art forms can only be occasionally guessed at. To date, no portable art has
been found in an archaeological excavation in Australia. This seems to demonstrate that in the past, as at present, most decorated objects were made of wood. The only non-perishable items of contemporary Aboriginal portable art which might demonstrate their existence in antiquity by turning up in some future excavation are the stone tjuringa. Archaeologists might also expect to find, in datable deposits, examples of "cyclons" - distinctive cylindro-conical stone artifacts which have been found in profusion on surface sites in the northwestern part of New South Wales. They are presumed to be prehistoric, because the Aborigines who inhabited this region at the time of first white settlement appeared to be quite unaware of their existence or significance. Many of them are engraved with simple designs which have been made by abrading grooves to form various patterns (Black, 1942). European archaeologists are fortunate that Late Palaeolithic artists, who, living during an ice age, probably had much less wood at their disposal, used bones and antlers to make the same implements that the Australian Aborigines carve out of wood, such as the spearthrower.

Problems and Methods in the Archaeology of Art

From this point on, the discussion will be narrowed to "rock/parietal art". Engraved and painted rock art is found all over the Australian continent, and, as explained in the last section, it does have some degree of homogeneity as an art form, unlike the many varieties of art in other media. All examples of portable and temporary art which are made of perishable materials, whether they are currently in use by Aborigines, or in museum collections, are presumed to be comparatively recent in date (even though the styles used in these objects might have a long history in Australia). On the other hand, rock art, as a category, is more eligible for archaeological study, because it has the potential to survive for a long period. In fact, there is evidence to indicate that at least some Australian rock art is of considerable antiquity. This is not to say that archaeologists are only interested in ancient material, but that, if they are to study rock art as one part of the prehistory of man in Australia, they have, because of its greater survival potential, a chance to see the whole range of one type of art through a long time span, rather than to see only the icing on top of the cake, which the contemporary portable and temporary art represents. Therefore the rest of this chapter will be
devoted to problems in the archaeological study of rock art, the methods by which it can be analysed, and a survey of work which has been done in this field.

Typology

Art is infinite. But each person, or group of people which practises art, uses only a selected range of techniques and forms, and it is this range which identifies the place of origin, or the period, or, very rarely, the individual. At the widest level, what does the parietal art of Australia consist of? Next, how can it be broken up into different categories? What are the most meaningful distinctions between the different types of Australian rock art - should they be based on technique, style, subject matter, location, or period?

The nature of Australian rock art has been presented visually in hundreds of publications which give detailed graphic records of sites in every part of the continent. In early articles, only the most spectacular individual figures were selected and illustrated, but the later work in this field includes a large number of sites and groups of sites which have been recorded and published in as much detail as possible (see Chapter 1 for discussion of examples of this literature).

The most popular recording methods in Australia have been photography and reduced scale drawings. Casting has occasionally been used for specially interesting engraved figures, but no representative collection of casts of different types of carvings has been made. Full scale colour tracings of cave paintings, which are often made in Europe, have not been much employed in Australia, probably because of practical considerations. The main cave painting sites are usually so remote from university and museum centres, that expeditions with equipment and personnel are expensive, and have so far been reserved mainly for archaeological excavations.

There are more and better grid recordings of engravings than of paintings, because they are easier to make and publish. The paintings often present the difficulties of a curved and undulating surface, poor lighting, intricate superimpositioning, and then the problem of reproducing the different colours in the final publication. Some areas where there are large numbers of spectacular and interesting paintings are very poorly
represented in the literature - e.g. Western Arnhem Land.

The next stage, after recording the art, is to construct a typology of it, which will do two things to systematise one's appreciation of "what the art is". The first task of a typology is to state, in clear terms, the range of phenomena present, so that to this range can be fixed the name "Australian Aboriginal rock art". But this art is not homogenous throughout the whole continent. The typology, therefore, at the same time, divides the observed phenomena into several named categories, so that a system of variations within the range is organised. It is necessary, of course, that names given to these divisions and sub-divisions be unambiguous, well defined, and uniformly understood and used.

However typologies are not usually designed according to these impeccable principles, by impartial and perceptive observers. Rather, they grow, like mushrooms, in the dark. In Australia, every fieldworker has used the terms which he likes best to describe that part of the rock art which he has recorded. As a result, there is some confusion of terminology in the literature. Some terms have been used too generally - e.g. "engraving" - as used to mean any kind of negative impression on a rock surface. Elsewhere, this term is normally used to mean a specific technique of carving, which is opposed to the term "pecking", as in Willcox, The Rock Art of South Africa (1963: 54). Different names have been applied to the same items, for example, certain carvings found in South and Central Australia which have been variously labelled "intaglions" (Davidson, 1936: 40), "intagliated engravings" (Mountford, 1955: 345), "pecked intaglions" (McCarthy, 1967: 23-7), "full intaglions" (McCarthy and Macintosh, 1962: 288), "rock engravings" (as distinct from "rock poundings") (Mountford, 1968: 687) and "petroglyphs or chipped insculpture designs" (Hossfeld, 1966: 69).

McCarthy has recently made an effort to impose a system of terminology upon the confused field of rock art description. I will discuss this attempt at some length in Chapter 3, and make some further suggestions for clarifying this aspect of the study of Australian rock art.

Quantitative Analysis

Studies of Australian rock art have recently shown an increasing trend
towards the quantitative methods which have been employed for some time with stone artifacts. McCarthy began this with his detailed numerical analysis of the Groote Eylandt cave paintings (1960: 402-10), Port Hedland rock carvings (1962b: 35-40), and other bodies of rock art which he recorded. His tables showed the composition of the sites in terms of subjects and colours present, and gave mathematical expression to the sequence of superimpositions. Their main contribution was to organise and confirm patterns which could already be seen by visual inspection of the sites or the records - i.e. nothing new. Percentages are not given by McCarthy, but these can easily be calculated by any subsequent researcher who wants to use them for comparison with other material.

More recently, mathematical techniques have been taken a little further, in order to demonstrate the existence of patterns of various kinds which might not otherwise be revealed.

Wright tabulated length and breadth measurements of a sample of 100 male and 100 female figures from rock engravings in the Upper Yule River area, the Pilbara region, northwestern Australia. These measurements were designed to discover whether there were significant groupings among the human figures, according to body proportions. Their length was taken from the top of the shoulder to the top of the leg, and the width across the thickest part of the torso. The length of each figure was then divided by the width, and Fig.2:1 shows the number of cases in categories which are related to naturalistic human proportions - i.e. thinner or fatter than normal, which has been taken to be a torso length twice as long as its width (see Wright, 1968: Tables 6 and 7, 45-6). There seem to be two main groups - one peak in the area of normal body proportions (length = approx. 2 x width) and another peak for moderately elongated figures (length = 4 x width). There is also a tendency towards small numbers of extremely elongated figures (Wright, 1968: 48).

Wright also noted how a count of motifs sometimes contradicted general impressions of the sites. He counted all the recognisable motifs at fourteen sites, dividing them into categories - human, other mammals, reptiles, etc., and calculated the percentage of each category at each site. Then he wrote:

The proportion of human motifs varies from 86% at Gregory Gorge down to 22% at Sherlock Station. The proportion for the Upper Yule River
TABLE 8
Indices of torso proportions in a sample of 100 male and 100 female figures in the Upper Yule River area.
(Indices obtained by dividing lengths by widths)

Fig. 2:1 (from Wright, 68:47) Example of quantitative analysis of rock art.
(24%) is surprisingly low. One cannot avoid being impressed by the human motifs there, but this is no doubt due to their larger absolute numbers, their large size and their very impressive forms. (Wright, 1968: 49)

In fact the largest category at the Upper Yule River is tracks, - 37 per cent of the total of 3007 engraved figures at this site. (39)

Another achievement for quantitative analysis was Edwards' use of motif percentages to show the unity of widely separated engraving sites in South and Central Australia. In the table shown in Fig.2:2, the first four sites are located in the south east of South Australia. The Central Australian site is Tukulunga, to the west of Alice Springs, and 800 miles from the other sites. It can be seen from this table that there is a surprising degree of consistency in the percentages of different motifs at all these sites. Edwards later studied other sites in Central Australia which also conform to this pattern - a predominance of kangaroo and emu tracks, which average 62 per cent of all motifs; circles 26 per cent and other designs 12 per cent (calculated from Edwards, 1971: 362).

On the status of these "other designs" he commented: "the unusual engravings often attract greater attention at first casual observation, but they are by comparison numerically insignificant." (Edwards, 1966: 36). Each site contains a different type of "other designs". Cleland Hills has its famous "funny faces" (Edwards, 1968a), N'dahla Gorge has little human figures with large headdresses (Edwards, 1971: Plate XVII), Red Gorge its "owls" (Mountford and Edwards, 1964), and so on. In fact, in the articles which he has published on South and Central Australian art sites, it is these "unusual engravings" which have been most often illustrated. So, although a survey of the photographs in Edwards' articles would lead one to feel that these sites were all distinctly different, the tables show that there is an overriding element of homogeneity. This means that these engravings can probably be regarded as one unit in Australian art history.

In these cases, quantitative analysis is simply a technique for increasing the observer's perception of the nature of a body of rock art. There is also a potential use for quantitative analyses of various kinds in the study of typology, chronology or distribution, but it is not in itself a problem or a solution.
### TABLE 1

Comparative percentages of design forms

<table>
<thead>
<tr>
<th>SITE</th>
<th>TOTAL</th>
<th>PERCENTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kangaroo Tracks</td>
<td>Emu Tracks</td>
</tr>
<tr>
<td>Flinders</td>
<td>955</td>
<td>22.3</td>
</tr>
<tr>
<td>Purnamitee</td>
<td>1603</td>
<td>33.8</td>
</tr>
<tr>
<td>Tjorren</td>
<td>2736</td>
<td>43.6</td>
</tr>
<tr>
<td>Winnimannie</td>
<td>3236</td>
<td>38.3</td>
</tr>
<tr>
<td>Central Aust.</td>
<td>3186</td>
<td>30.1</td>
</tr>
</tbody>
</table>

Fig. 2:2 (from Edwards, 1966: 34) An example of the quantitative analysis of large numbers of engraved motifs at widely distributed sites in South and Central Australia.
Distribution

Distribution studies follow from typology and quantitative analysis. Once the units of the Australian rock art have been recognised, will a map showing their geographical distribution reveal any interesting patterns which might suggest new facts about the art? These might relate to possible diffusion routes into the continent, the sequence in which the different styles entered Australia or evolved within it, correlations with geographical or cultural regions, or with other archaeological distribution maps.

There are plenty of local distribution maps of areas where intensive fieldwork has been carried out. Superimposing these on a map of Australia, however, tends to give a distribution map of fieldworkers, rather than of rock art. Recent field surveys by Edwards, not yet published, seem to indicate that Aboriginal art sites are much more numerous and widespread than fully recorded material indicates (pers. comm.).

Davidson's and Lommel's maps relate mainly to non-parietal art, and neither of them achieved very much. There are really no developed distribution studies, although Edwards has discussed some implications of the wide dispersion of the engravings he has studied, and McCarthy's superimposition studies (see p. 70) are partly tied to distribution. I will be tying this in with my own hypotheses about Australian rock art in Chapter 6.

Chronology

There are a few absolute dates for prehistoric Australian rock art. At the moment, Koonalda is holding its position in the "oldest" time slot, with a score of 20,000 B.P. Although there can be no direct dating of the finger markings and abraded grooves in the depth of the cave, the circumstantial evidence includes association with the flint quarrying, a C14 date on burnt fragments of twigs which appear to have been part of a torch, the extreme contrast between the heavily eroded condition of the prehistoric markings and very fresh modern vandalism, and the relationship of the art to rockfalls in the cave (Maynard and Edwards, 1971: 75-6).

Detached rock fragments bearing engraved emu and kangaroo tracks and abraded grooves were excavated by Mulvaney at Ingaladdi in the Northern Territory. Ingaladdi is a sandstone outcrop which is covered with engravings
and paintings. The slabs recovered from the trench had apparently become detached from the wall and had fallen into the deposit. They were found at two levels - the first, 1.1 - 1.2 metres deep, was dated to $4,920 \pm 100$ B.P. and the second, 1.7 - 1.8, $6,800 \pm 270$ B.P. (Edwards, 1971: 363). These dates only indicate when the engravings were detached from the wall, and not when they were originally carved. They are, therefore, at the very least, 5000 and 7000 years old. The fragments were associated with an artifact assemblage which is typical of the early phase of Australian prehistory - "Primary stone flakes and rounded cores ... almost all retouched artifacts are large scrapers, including rounded, domed, steeply trimmed, and concave types, while numerous cores were utilised as core scrapers, reminiscent of small horsehoof cores." (Mulvaney, 1969: 150)

During his excavation of Devon Downs rock shelter on the Murray River, South Australia, Tindale observed three kinds of rock engravings which could be related to various layers in the deposit, and, ultimately, to cultural phases (Hale and Tindale, 1930: 208-12). Type A consisted exclusively of small abraded grooves which were found in groups on the back wall of the shelter, adjacent to Layer V, between 3 and 4 metres below the surface of the deposit. Tindale described them as "sharpening" grooves for bone points. Some groups consisted of grooves radiating upwards from a common centre, suggesting a series of sharpening marks made in one episode. As they were covered by the upper layer of the phase which Tindale called the Mudukian, they could have been made during the early Mudukian or in the preceding Pirrian phase, but no later (210). The Pirrian layers were subsequently carbon dated to $4,250 \pm 180$ B.P., so these abraded grooves are probably a little younger than this (Mulvaney, 1969: 181). They are unlikely to have been made before occupation deposit began accumulating in the shelter, because they are located between two and three metres above its natural floor (Hale and Tindale, 1930: Fig.41, 176).

Carvings of Type B consisted of broad grooves chiselled into the soft ceiling of the shelter, forming meandering lines, tortoises, bird tracks, "suns", circles, mazes of intersecting curvilinear lines, and rows of deep pits. The earliest limit of these engravings is indicated by a large rock which fell from the roof of the shelter, coming to rest on the uppermost level of Layer V, and thus exposing an area of the present ceiling, on which engravings of Type B were subsequently engraved.
Another rock, which fell onto the uppermost lever of Layer II, was found to have Type B carvings on its lower surface. The area of the wall which was left exposed was subsequently covered with carvings of Type C. Thus Type B is associated with the Early Murundian (Layers III and IV) and Type C with the Late Murundian (Layers I and II), which Tindale equated with the material culture of the Murundi tribe who inhabited the Lower Murray River during the ethnographic period (206-8).

Type C engravings consist of abraded grooves which, unlike those of Type A, are arranged in patterns – lattices, bird tracks, herringbones, railway tracks, stick figures, plus rows of small pits. Types A and C resemble arrangements of abraded grooves found elsewhere in Australia, but Type B is unlike any other Australian engravings, with broad grooves instead of V-shaped ones, and a range of motifs which does not correspond with any other known site.

The Pirrian, Mudukian and Murundian phases at Devon Downs have now been assimilated into the later period of Australian prehistory, incorporating Mulvaney's Inventive and Adaptive Phases. Tula adze-flakes and pirri points, the two main "types" found at Devon Downs, are characteristic of these later phases.

Macintosh excavated the floor of a rock shelter near Mount Manning, north of Sydney, which contained two distinct series of drawings (1965). One group, drawn in dark red ochre, comprised two well drawn anthropomorphic figures with "horns" on their heads, two dingos, and two echidnas in a uniform style. The other group, which is spatially separate from the first, includes hand stencils, eels, snakes, kangaroos and indeterminate motifs (88-92, Plates I-IV). The predominant colour of this group is a light red ochre. In the deposit, Macintosh found two layers of ochre, at different levels, which exactly matched the colours of the two groups of drawings, the shades being checked with Munsell charts. The earlier layer, which corresponded with the first group of dark red drawings, was dated to approximately A.D. 1400 and the upper layer, of light red, to between A.D. 1750 and A.D. 1830 (Macintosh's interpretation of carbon dates and stratigraphy (85 and 93-6).

This does not prove that the two groups of drawings were done at these times, because ochre could have been brought to the site for other purposes, e.g. body decoration. There was, however, very little evidence of any
other occupation activity at the site, and the correlation of two different series of drawings with two matching layers of ochre at different levels in the deposit makes the argument more convincing. It seems likely, therefore, that these figurative cave drawings were contemporary with the most recent cultural phase in the Sydney area, as represented by, for example, the upper layers at Curracurrang, containing elouras and fish-hook files (Megaw, 1966 and 1967c).

Table 2:1 summarises the known absolute dates of Australian rock art. It hardly constitutes a chronology of Australian rock art. There are enormous gaps between the dates, and spatial gaps between the sites. To make matters worse, most of the main types of rock art are not represented. It is irritating that Devon Downs, which contains such a complicated interrelationship between engravings and stratigraphy, does not really contribute very much to Australian art history. The abraded grooves, as an art type, are too generalised, and the Type B engravings are too specialised. In Koonalda, the wall markings are obviously influenced by the unusual circumstances of the extremely soft walls, and the forms found here are not very relevant outside this situation. There is no necessarily implied cultural connection between a scratched lattice at Koonalda and a scratched lattice in Type C, Devon Downs. It is easy to scratch straight lines in two directions on a soft wall without being influenced by historical connections.

The main use of these dates at present is to combine them with other forms of evidence about the relative age of different kinds of rock art in Australia, while waiting for more dates to turn up.

Relative Dating by Superimposition

With so few absolute dates, relative dating of the different phases in prehistoric rock art seems to offer more hope of success. Establishing a sequence among different kinds of rock art could be the first step towards correlating art with other aspects of Australian prehistory.

In a number of books and articles, McCarthy has proposed Australia-wide sequences of different kinds of rock engravings and cave paintings (1962b; 1964; 1965a; 1967). Because of the number of times that he has reiterated his sequences, and their location in key positions in the literature of Australian Aboriginal art, these views come close to being the established
### Table 2:1
Absolute dates for Australian Rock Art

<table>
<thead>
<tr>
<th>Site</th>
<th>Type of Art</th>
<th>C14 Date B.P.</th>
<th>Cultural Associations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Koonalda</td>
<td>finger markings and abraded grooves</td>
<td>20,000</td>
<td>Pleistocene flint quarry</td>
</tr>
<tr>
<td>Ingaladdi</td>
<td>pecked tracks and abraded grooves</td>
<td>at least 5000 and probably more than 7000</td>
<td>large core and flake tools = early phase of Australian sequence</td>
</tr>
<tr>
<td>Devon Downs</td>
<td>simple abraded grooves (A)</td>
<td>circa 4000</td>
<td>&quot;Mudukian&quot;</td>
</tr>
<tr>
<td></td>
<td>chiselled grooves, curvilinear forms (B)</td>
<td></td>
<td>tulas and pirris = later phases of Australian sequence</td>
</tr>
<tr>
<td></td>
<td>patterns made of abraded grooves (C)</td>
<td>post 4000</td>
<td>&quot;Early Murundian&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Late Murundian&quot;</td>
</tr>
<tr>
<td>Mt. Manning</td>
<td>two series of figurative drawings</td>
<td></td>
<td>none, but contemporary with the most recent phase in the Sydney area</td>
</tr>
<tr>
<td></td>
<td>(1) dark red ochre</td>
<td>550</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) light red ochre</td>
<td>120</td>
<td></td>
</tr>
</tbody>
</table>
version of Australian art history. Parts of McCarthy's sequence are often cited by fieldworkers operating in localised areas who relate their observations of sequences to McCarthy's in various ways. (Wright, 1968: 67; Sim, 1969: 170; Edwards, 1971: 364). For this reason, I shall discuss McCarthy's sequences in some detail. He assumes a dichotomy between rock engravings and cave paintings, so the sequences of them which he has set up must be discussed separately.

Rock Engravings

The most detailed presentation of McCarthy's four-phase sequence of rock engravings is to be found in "The Art of the Rock-Faces" in Australian Aboriginal Art, edited by Berndt. He states that the results are based entirely on superimposition.

The present author, as a result of widespread fieldwork, defined four phases by a study of the engraving or superimposition of techniques, motifs, and styles over one another at traditional sites .... The first phase consists of abraded grooves, either scattered irregularly over a rock-face, or arranged in simple designs which include parallel, gridded and radiate sets, associated with bird tracks and crosses. Rounded holes bored into the rock are commonly found with them. (33)

Examples of this phase are found at Cathedral Cave in the Carnarvon Ranges, at Devon Downs, at Delamere, close to the "Lightning Brothers", and at other sites all over Australia.

The second, or outline, phase of engraving is represented by tortoises, circles, and other simple motifs whose grooves are abraded into the limestone walls of, for example, the lower River Murray rock shelters, .... The finest displays, however, are in the Sydney-Hawkesbury River district of eastern New South Wales, and at Port Hedland and other sites in north-west Australia. At these sites the pits and punctures are up to an inch wide and half an inch deep, but are usually smaller. They either overlap one another to form a continuous groove, or make an outline of separated pits. (34)

The motifs found in this phase are almost all representational, and the subjects are mostly naturalistic, but mythological heroes are an important theme. However, "the outline naturalistic phase of engraving is not of a very high artistic standard" (36).
In the third phase of engraving in Australia an abrupt change took place in the motifs, but not in the technique. The motifs changed to the formal, the conventionalised, and the symbolic. Linear and geometric designs include the full and half concentric circle, the arc, parallel sinuous lines, meandering line and maze, barbed spearhead, radiate, pubic apron, feather-plume ornament, and animal tracks. They all occur in northwest Australia, where it is thought they were introduced during the diffusion of bronze-age techniques and art designs some two thousand years ago from South-East Asia into Indonesia and Oceania. More work is needed to establish this linkage. However it is plain that such designs spread from the north-west, south-eastward into Central Australia, South Australia, and as far east as the Great Dividing Range in New South Wales and Queensland. As a rule, they are haphazardly engraved, often close together, and compositions are almost unknown among them. Although this is, as it were, a prehistoric phase of engraving, some of the motifs, including the full and half concentric circle, parallel sinuous lines, animal tracks and others, survived to become an essential element in the ritual art of the living people of Central Australia. Harney and Elkin both obtained interpretations of some of these linear-design engravings from Aborigines, but Mountford has cited most of the south and central Australian sites as being either non-interpretable by, or unknown, to local Aborigines. (36)

It is clear from this description that McCarthy is referring to some of the rock engravings in Central and South Australia which have been studied by Edwards and Mountford (see pps. 51 and 182-99) as well as some of the engravings at Port Hedland.

The fourth or pecked phase of engraving is artistically perhaps the most interesting. It, too, represents another abrupt change in aesthetic values and style. On this occasion there is a change from the formal symbolic art of the third phase to a representative art, in which a classical type developed and spread as far south-east as the Flinders Range and western New South Wales .... The thousands of pecked intaglios scattered over Depuch Island, for instance, depict fish, dolphins, whales, turtles, dingoes, emus and wading birds, praying mantis, snakes, lizards, clutches of eggs, weapons and other artifacts. Hunting compositions include men spearing kangaroos, mangrove crabs and turtles, and animals killing one another. (36)

Pecked intaglios are solid figures, as opposed to outline and linear figures. They are also found at Port Hedland and Mootwingee.

The mythology of the prehistoric phases can, of course, never be known; but that of the pecked phase should be recorded wherever

* The text says "second phase", but the context indicates that this must be a printing error.
possible because this art is the latest one, and belongs to the culture of Aborigines living at the time of European occupation. (37)

I do not agree that this sequence, based on superimposition studies at several widely separated sites, represents the history of engraved art in Australia. My criticisms of this approach, and of the details of McCarthy's sequence, follow.

In my opinion, an important aspect of this process is the difficulty of determining the order in which two or more intersecting engravings were manufactured. There are several factors which make for deceptive appearances. If one carving is deeper than the other, then it usually tends to look more recent. Obviously this is not necessarily the case. Presumably, when the carvings were quite fresh, a close examination of their intersecting facets would show which came first - individual pits or grooves comprising the second would be seen to cut through the component marks of the earlier figure. But virtually all Australian rock engravings are eroded and patinated by weathering. The edges of these individual marks have all been altered and it is no longer possible to see intersections. My own experience of looking at rock engravings suggests that, in almost all cases, it is impossible to tell which of a pair of superimposed figures came first. However, if one has a fixed idea of which type of engraving ought to be the first in that sequence, then it is easy to see the marks in such a way as to confirm one's idea.

For example, if a pecked solid figure intersects a pecked single line, and both are patinated and eroded, then the solid will always appear to be over the line, because the line disappears into the solid - i.e. the solid appears to have obliterated an earlier line design. But consider the reverse order. It is possible that the solid figure was on the rock surface first, but was patinated (not displaying any colour contrast with the surrounding surface) before the single line was pecked through it. At this stage, the freshly pecked line would have stood out by colour contrast against the weathered surface of the older engraving but when the second carving became patinated in its turn, the pits belonging to the line figure would have disappeared among the pits belonging to the solid. Further erosion (smoothing of the facets by weathering) would have eliminated any visible difference between the pits belonging to both figures.

In "The Archaeology of Mootwingee, Western New South Wales", McCarthy said:
Basedow ... illustrated, but did not comment upon, an important series of superimpositions in two sites at Deception Creek in the Flinders Ranges. His photographs demonstrate that at these sites fully pecked intaglios of owls, human feet, lizards and other animals, tailed radiate figures and emu tracks, are engraved over circles with a thin punctured outline. The consistent superimposition of the full intaglios over the circles indicates that the latter preceded the former in the Flinders Range area. (288)

This is surely reminiscent of the situation described in the preceding paragraph. The fact that McCarthy is prepared to deduce superimposition sequences from photographs shows that he has not perceived the other possibilities of this particular situation (a solid figure intersecting a line figure).

He goes on to list the following superimpositions which he saw at Sturt's Meadows, in western N.S.W.:

- Full intaglio lizard over line design.
- Full intaglio emu and kangaroo tracks, beside a sphere, over line design of radiate type.
- Full intaglio human foot over linear man or lizard.
- Full intaglio lizard over line design centred on small hole in rock.
  (+ 5 other examples, all intaglio over linear-L.M.) (288)

I have been to Sturt's Meadows. My visit was short, and the site is extensive. I could not locate the exact cases of superimpositions listed by McCarthy, but I did see examples of juxtaposed line and solid figures. I felt that, in the light of the considerations which I described above, it was not possible to say which engraving was made first. All the carvings at Sturt's Meadows have been weathered quite smooth, and the exact intersections are eroded and obscured. I also saw an example of pits and abraded grooves where it is quite impossible to tell which came first, even though the techniques are different.

Abraded grooves are the main component of McCarthy's first phase. Some abraded grooves are undeniably old, because they have been dated between 20,000 and 4,000 B.P. at Koonalda, Ingaladdi and Devon Downs (see pages 53 - 55). But at Ingaladdi, pecked emu and kangaroo tracks were found in the same layers in the deposit. At Devon Downs, Type C abraded grooves are firmly associated with the most recent layers. Arndt describes abraded grooves at Delamere which, according to his Aboriginal informants, were made in the recent past.
.... "the old fashioned way for making rain was to cut the Old Man Rain to make him bleed." The engraved grooves near the Lightning painting were called "rain cuts" by him. An adjacent high rock outcrop was identified as the Old Man Rain called Gudbalano, and all the rocks around about were part of him. The rainmaking ceremony involved singing and dancing and then each man present cut a groove in the rock to make the Old Man bleed and bring rain. (Arndt, 1962: 171)

Presumably the informant was not looking back over thousands of years, but is referring to events which took place, at most a few generations ago. That these particular grooves are of recent origin is supported by the excellent photograph of some of them in Mulvaney's Prehistory of Australia, Plate 77. The rock surface (quartzitic sandstone) has a slightly rough texture, but most of the grooves in the photograph are extremely smooth and their edges are quite sharp. A few of the cuts, in the bottom left of this photograph, appear to have weathered to a more uneven texture, and a slightly darker colour. Edwards confirms this apparent differentiation in weathering and presumed age among these particular grooves at Delamere, and the extremely fresh appearance of some of them, which seems to fit in with Arndt's informant's explanation (pers. comm.). If this interpretation is true, then it extends enormously the time span of abraded grooves, and destroys their use as a marker in McCarthy's scheme of superimpositions. Besides, the technique of abrading a groove is so simple, and produces such invariable results, that this form seems inappropriate as a whole "phase" in a sequence of art styles.

In order to discuss the other phases in McCarthy's sequence, and the evidence which it is based on, it is necessary to consider the detailed records of the sites at which he established the order of the superimpositions. Port Hedland is the most important, because three of the four phases are represented among the 7,000 figures which McCarthy noted, and he discusses the superimpositions and their implications very fully (1962b).

In this article, the second and third phases are called "Punctured Line: Outlines" (9) and "Punctured Line: Linear Figures" (17). (These become, in the tables of Frequency Occurrence and Range of Subjects, "Conjoined Punctured Outline" (35) and "Conjoined Punctured Linear Figures" (38). Only the "linear" category is defined:

These figures are those in which the punctured line does not enclose a body or space, and include stickmen, lizards, parallel and sinuous lines, arc, animal tracks, fringes, plume, spearhead and spear, grid, radiate and other miscellaneous figures, or designs such as the concentric circle and spiral and meandering patterns. McCarthy, 1962: 17)
Thus the only explanation of the typological difference between these categories is that one does not enclose space, and the other presumably does. Elsewhere these groups are elaborated into two major phases of Australian art history, with no further definition.

There are many internal inconsistencies in this classification, which can be shown up by an examination of the actual figures in these two categories at Port Hedland. Concentric circles are "linear" (20). Any other circles, including those with other kinds of internal design are "outline" (11). Three concentric circles with a straight line projecting from them are a "stingray", and hence they are "outline" (64 and Fig.85). Three sets of short parallel lines are swords belonging to invisible swordfish, and hence are "outline", but any set of longer parallel lines are "linear" (10, Fig.86, 19, Fig.250). Human footprints represented by a long U and short parallel lines for toes are "outline" (9, Fig.63); kangaroo and bird tracks shown by short intersecting lines are "linear" (17, 38). The 40 "Minjibiru Spirit" figures cause terrible confusion (20-7). They are clearly anthropomorphic, and in shape and size they resemble outline human figures. But they consist of sinuous lines which do not completely enclose space (see Fig.2:3). By the above definition, they should be "linear", and it is under this heading that McCarthy classifies them in the main text (20). However, their hands and feet are often pecked solid forms, which theoretically belong to the last phase at the site - "pecked intaglios", and they are often closely associated with "intaglio" human footprints. McCarthy's Aboriginal informants were able to name the Minjibiru, and relate a few facts about their legendary rôles, which seems to imply that they have some association with the recent traditional culture (26-7). He eventually concluded that:

.... the Minjibiru figures belong to the early outline naturalistic phase of engraving, and further ... in the intaglio phase the human tracks were added, so that the mythology relating to them was preserved throughout the period of engraving, or most of it, although the techniques employed changed. (27)

In the tables these figures appear under "outlines", instead of "linear" (38). McCarthy is bending over backwards to fit the Minjibiru into the category with which they have the most obvious visual affinity, so that, even though they do not consist of an enclosed outline, even though they incorporate "pecked intaglio" as an integral component, and even though they are part of recent mythology, they end up in the earliest phase, as
These inconsistencies may point to a fault in the definition of the two groups in terms of enclosing or not enclosing space. Another examination of motifs comprising the two groups shows that almost all of the "outline" figures are in fact identifiable naturalistic subjects - human figures, footprints, birds, eggs, snakes, lizards, fish, stingrays, turtles, boomerangs, clubs, shields, axes, etc. (9-17). The drawings show that these motifs are actually recognisable as these subjects. On the other hand, the motifs in the "linear" category are either geometric - arc, grid, parallel lines, zig-zag lines, line maze, radiate, concentric U's, concentric circles, etc., or of doubtful identity - barbed spear, pubic fringe, feather plume ornament (17-20). Some of the motifs thus named do look like spears, pubic fringes and feather ornaments, but a lot do not. (see Fig 2:3). I feel that McCarthy's original classification of these two groups was really based on "identifiable" and "unidentifiable", which was then codified into "outline" and "linear" respectively, and some types of motifs had to be forced into one category or the other, causing several quite irrational groupings - e.g. concentric circles = "linear"; other circles = "outline". The Minjibiru had to end up in the "outline" category because they are "identifiable" as anthropomorphic figures.

McCarthy divides off another, subsequent phase called "pecked intaglio" (29-33). It includes all solid figures. The largest group in this category is tracks (which are shown more realistically as pecked solid forms, instead of intersecting lines, as the ones in the "linear" group) - human, kangaroo and bird tracks comprise 1,726 out of the 2,123 figures in "pecked intaglio" (39-40). This fact needs to be considered in relation to a later statement in this article.

As a conclusion to his study of superimpositions at Port Hedland, McCarthy listed the four phases of rock engravings which have spread in waves across Australia, beginning in the north-west.

3. Linear Design phase which includes the spiral, concentric circle, grid, fringe, cluster and other designs occurring throughout the region from northwestern Australia to the Flinders Range, Central Australia, western New South Wales, and eastward to west of the Great Dividing Range at Narrabri, north-eastern New South Wales, and Pigeon Hill, Queensland. It has survived as the sacred art in the rituals of the central Australian tribes. It is considered that the
Fig. 23 (after McCarthy, 1962b: Figs. 26-8) McCarthy classified the motifs shown here in the following way:

- ➡ points to an "outline" figure
- ➡ points to a "linear" figure
- ➡ points to an "intaglio" figure
- ➡ points to a "Minjibiru Spirit", which McCarthy classified as "outline"

It is difficult to reconcile some figures with the definitions for these terms in McCarthy's text, and there are several inconsistencies.
crocodile figure of Panaramitee belongs to this intermediate phase as a cult design. (48)

This means that "Linear Design" appears at the sites in Central and South Australia which have been studied by Mountford and Edwards, Panaramitee being specifically mentioned. According to McCarthy's sequence therefore, all these sites must include two phases - the "linear", represented by the circles, crescents and other designs (see p.62), and "pecked intaglio", represented by the kangaroo and emu tracks (the tracks at these sites are generally all of the pecked solid type, which was "pecked intaglio" at Port Hedland). McCarthy does assume this (that there are two phases at these sites) when he mentions "the relatively late spread of the pecking technique into the Flinders Range sites" (49) and discusses the superimposition of the two forms at Sturt's Meadows. Theoretically, at all these sites, all the "pecked intaglio" kangaroo and emu tracks must be superimposed on all the "linear" circles and crescents. But Edwards' quantitative analysis (p.51) strongly suggests that the engravings at these sites constitute a single artistic unit, because of the consistent proportions of different motifs, even over long distances (see also my discussion of "Styles", pps. 114 - 6). It is difficult to imagine that all the kangaroo and emu tracks were engraved over the top of the circles and other designs in a fixed ratio according to how many circles were already present on the rock surface when the "fourth phase" began. In my own experience of examining engravings at typical sites of this type (Panaramitee, Sturts Meadows), there is no sign of a superimposition sequence among these two categories of figures.

In fact, the circles, crescents and other designs in the Central and South Australian sites are not usually formed of single lines, but of pecked bands (see photos and figures in Edward's articles) - i.e. they do not conform to the definition of "linear" given for Port Hedland. "Spear with double row of barbs" and "pubic fringe" which are the most numerous "linear" motifs at Port Hedland (McCarthy, 1962b:39), are among the tiny group of "other designs" in Edwards' table (Fig.2:2), while circles and crescents, which, after tracks, are the dominant motifs in Central and South Australia, are comparatively rare at Port Hedland (McCarthy, 1962b: 36,39). To sum up, the "linear" designs in Central and South-Australia do not resemble the "linear" figures at Port Hedland, and the former are firmly associated with "pecked intaglio" tracks to form one artistic unit, so McCarthy's statements about the diffusion of these phases through the continent are not supported...
I have already stated one objection to the unquestioned acceptance of a superimposition sequence involving solid figures "over" line figures. In reference to Depuch Island, which he re-examined after McCarthy, Crawford looked at this situation from the point of view of an artist selecting a surface on which to carve his design.

Study of superimposition leads inevitably to the conclusion that pecked-in figures are superimposed on outline figures. This, however, does not prove that pecked-in figures represent a later style. It is almost impossible to engrave an outline figure over a pecked-in area where the rock surface has been largely removed, but it is relatively easy to engrave a pecked-in figure over an outline figure. In these cases the superimposition dating method seems to be at fault.

Some of the engravings show a combination of outline and pecked-in techniques. For example, several large outline dugongs have pecked-in tails and fins. Such combinations do not indicate a change in technique unless one supposes that the fins and tails were later engravings. (Crawford, 1964: 48)

Wright, after working in the Pilbara region, also took up this argument:

... outline pictures are not at all likely to occur over the fully-pecked ones, because they will not show to advantage.
... it would follow that if outlines had been made at the same time - or even continued later than all-over pictures - we could not expect to find evidence of the fact in these superimpositions, because the artists would have avoided fully-pecked surfaces. In fact, some outline pictures do occur over fully-pecked ones. In the Ophthalmia Range Mr. Crawford and I found a triple superimposition, with an outline emu, over an outline kangaroo, over an all-over human figure. However, this probably occurs only when the pecked picture has faded, or when it is small in comparison with the overlapping ones, as in this case. (Wright, 1968: 66-7)

These passages weaken claims made for the use of superimposition to establish the art history of this area. Even if a consistent superimposition sequence could be identified, it would not follow that this represents a long-term change through time in the use of different forms.

A survey of the list of motifs in the "pecked intaglio" category at Port Hedland shows that the same subjects occur in this form as in the other two categories - human figures, footprints, kangaroo tracks, bird tracks, eggs,
snakes, lizards, stingrays, boomerangs, clubs, spears, pubic fringes, feather plume ornaments, radiates, parallel bars, banded designs (which are exactly like the "line mazes" in the "linear" category, but with thicker lines), arcs, circles and indeterminate shapes. The only unique "pecked intaglio" is one mangrove crab. There are the same significant absences - no recognisable macropods or other mammals, and no identifiable emus, although these subjects are found in almost every other art area in Australia which contains figurative representations. Therefore, although the "pecked intaglio" differ in form, their range of motifs is almost identical with the combined ranges of the other two categories (McCarthy, 1962b: 29-33, 39-40, Figs.298, 304-26).

There are other indications of associations between the "pecked intaglios" and the line designs. As well as the 40 Minjibiru, which have pecked solid components and associated tracks, there are 14 compositions of outline eggs with solid emu legs on either side (this probably represents the emu sitting on the eggs) (38). McCarthy's Aboriginal informants also identified two other compositions which involved both outline forms and solid forms. McCarthy decided that the solid ("intaglio") elements in these compositions had been added later, when the techniques changed (33-4).

As I am not satisfied that McCarthy has established that this site contains several different phases, I am tempted to imagine an alternative explanation of the Port Hedland engravings, as follows:- The site contains only one phase of engravings, with no marked changes during the period of use. Outline designs and solid forms were used throughout this period. A particular range of motifs was appropriate to this site, including the unusual Minjibiru anthromorphs. Marine subjects were very popular, but mammals and emus were, for some reason, excluded. Any motif could be done in outline, or in solid form, according to circumstances unknown to us. Kangaroo and emu tracks were most often shown in solid form, but were sometimes abbreviated to short intersecting lines - perhaps when the artist did not want to spend much time. Someone who was making an outline figure might have tended to avoid surfaces which already had solid designs on them. Some of the subjects at Port Hedland are recognisable by us - i.e. they resemble objects which are familiar to a European observer, but other forms are unidentifiable, and can only be given names like "circle", "radiate" or "pubic fringe" (which may or may not actually represent an item of Aboriginal dress). Is this explanation of Port Hedland any less
plausible than McCarthy's three-phase sequence? If the distinction between "outline" and "linear" is rejected, and if superimposition as a means of determining change at this site is undermined, then the above version of the art history of the site will do just as well as McCarthy's.

In the light of Wright and Crawfords' observations at other sites in this area, and the other difficulties inherent in determining superimposition sequences, which I have pointed out (McCarthy never discusses the method), I do not feel that a relative chronology of long-term changes in art at Port Hedland has been established.

I have presented this long argument about Port Hedland, because of the far-reaching conclusions which McCarthy came to at the end of his discussion of these superimpositions.

The sequence revealed by the superimpositions has an important bearing on our interpretation of rock engraving in Australia as a whole. It provides criteria for distinguishing ancient portrayals from recent ones, until now not apparent. Thus sites of engravings all over the continent, if the superimpositions are studied and the range of styles, techniques and motifs is considered, should conform in general to the above sequence or chronology, and the art history of each site will thus be revealed. It is obvious, further, that attempts to obtain interpretation of prehistoric motifs are foredoomed to failure. It is only the figures engraved in the latest technique in a site that we can hope to have interpreted by living natives. (McCarthy, 1962: 49)

(The "living natives" explanations of the Minjibiru were "foredoomed to failure" - they were written off as survivals from a prehistoric phase!)

McCarthy has interpreted many other sites in the same way, ending up with the Australia-wide four-phase sequence which he put forward as established fact in "The Art of the Rock-Faces". I would now like to summarise the reasons why I disagree entirely with the four-phase theory.

1. Some abraded grooves are very old, but some may well be quite recent.
2. At Port Hedland, the division between the "outline"/second phase, and the "linear"/third phase is not justified.
3. "Linear" engravings at Port Hedland are different from "linear" motifs identified by McCarthy elsewhere in Australia. In South and Central Australia, they form an artistic unit with "pecked intaglio"/fourth phase tracks, which invalidates McCarthy's view of these phases spreading in waves across the continent. Pecked solid kangaroo and emu tracks at Ingaladdi are at least 5,000 years old.
4. There are two strong objections to the unquestioned acceptance of any superimposition sequence involving solid forms over line forms (fourth phase over second or third phase). One is the differential selection of rock surface according to what is already on it, and the other is the ultimate condition of the engravings after patination and erosion.

Cave Paintings

McCarthy's study of Australian cave paintings is not so systematised as his engraving sequence; nevertheless, it is based on the same premises, which he sets out in "The Art of the Rock Faces". A summary follows.

Like the engravings, they (cave paintings) may be categorised as belonging to a number of phases, some of local and others of continent-wide significance; and here, also, it is only through careful scrutiny of the various superimpositions of colours, styles, and motifs, that an understanding of this problem and the separation of the prehistoric from the later series can be attained. (37)

He believed that external stimuli were the main factors producing variations in paintings between different parts of Australia. The general sequence of styles is therefore linked to their geographical distribution.

... the quality of production and the nature of the motifs vary considerably from one part of Australia to another. This may be ascribed to the remoteness of the southern tribes from those in the north, whose art and religious ideas were enriched by contact with Indonesians in Arnhem Land and Papuans from Torres Strait in Cape York. ... For this reason the art of the north is often technically superior. There is a greater range of colours and combinations of colour, more imaginative application of motifs, and more diversity in art styles. These features of cave art decrease in quality as we move toward the south-east and south-west of the continent. (38)

In the description of painting phases which follows, it is apparent that, for McCarthy, the main determinants of sequence were distribution and degrees of quality and diversity, and not superimposition, as he stated in the opening discussion.

Actually, McCarthy did not offer any evidence at all for the position of his first phase:

Stencilling was practised in the earliest period of painting in Australia (38)
except the implication that stencils are found in all parts of the continent.

The next painting style was simple naturalistic representation of human and animal themes.

In the central coastal region of New South Wales the first phase of cave art was stencilling, perhaps allied with simple outlines of animals and hunters. It was followed by a second phase consisting of drawings of ancestral spirits, human beings, animals and weapons, in dry red, white or both pigments. This was a true naturalistic phase. (38)

This style is also found in Victoria, central N.S.W., Cape York and:

This zoomorphic art is dominant again in the early phase of painting found in the numerous rock shelters of Arnhem Land and its offshore islands. It is part of a widespread mantle of large and colourful paintings of the animals upon which the people lived, an art that survived throughout the Aborigines' occupation of the country, apart from local changes and variations as in eastern New South Wales. .... The cave art of Arnhem Land did not stagnate, nor become restricted, ... changes did take place. Stimulating these to some extent were the contacts of Indonesian traders with these north-coast Aborigines. (39)

The most recent phases of Aboriginal cave painting are found only in the north of the continent.

In western Arnhem Land, in the inland sites between Tor Rock and El Sharana, the basic naturalistic art was apparently abandoned quite abruptly: there is an intrusion (of unknown origin) of a great variety of paintings relating to malignant and beneficient spirits, reported by the local Aborigines to live in the rocky escarpment or in the bush near waterholes. .... The Mimi specimens are the most gracefully drawn and posed human figures yet found in Australian cave art. They are small, sticklike people (who) ... live and hunt in the same way as the Aborigines do. Static drawings of men carrying spear and spearthrower, basket and fan (or fly whisk), are just as aesthetically attractive as are those depicted in action, rushing with giant strides, fighting with spears, dancing and performing rituals. As some of them carry hafted stone axes, they are probably of no greater age than the introduction of this artifact*. (40)

* That is, about 22,000 years ago. At the time McCarthy wrote this, ground-edge axes were thought to be a recent introduction. However, White found axes in archaeological deposits in Arnhem Land which have been dated to the Pleistocene (Mulvaney, 1969: 110,112,130).
In the more recent phase of cave art in western Arnhem Land, X-ray figures are painted of various creatures, usually lifesize or larger. On a white or yellow background, internal details like the backbone, alimentary tract, gills, heart, liver, pelvic girdle are painted in panels of fine parallel lines.

The Wandjina paintings in the Kimberley and the "Lightning Brothers" at Delamere are also examples of recent stylistic influences in the north of Australia.

It is possible that superimposition of cave paintings does not always indicate changes through time. In the French Palaeolithic painted caves, Leroi-Gourhan has shown by quantitative analysis that superimposition was used as a device for associating particular motifs in regular patterns (1968: 118-20). His study suggests that the positioning of motifs in different parts of the caves was done according to a preconceived scheme, involving different animal species and symbols representing male and female (158-172 and 506). Laming had already observed that close examination of many cases of superimposition suggested that the two figures had been painted at the same time (1959: 103-11, 178-86). She concluded:

... that Palaeolithic artists depicted carefully composed groups of animals, and that many closely associated figures which have hitherto been interpreted as juxtapositions or superpositions should in fact be regarded as deliberately planned compositions. (author's italics) (Laming, 1959: 186)

Leroi-Gourhan found that:

... the bison is associated with horse in 64 per cent of the cases, all other associations being less than 3 per cent ... The ox is associated with the horse in 49 per cent of the cases, other associations being negligible ... 33 per cent of the stags are associated with horses, at the entrance and at the back of the caves, but chiefly at the back. ... It throws a little light on the role played by the mammoth to note that the only substantial percentage it discloses (38 per cent) is when it is linked with the bison. (Leroi-Gourhan, 1968: 120)

Thus superimposition was used in these caves to link different motifs together in meaningful compositions, and hence cannot represent a change through time in the history of art. Patterns like this have not yet been recognised in Australian paintings and engravings, but the possibility of
alternative explanations for superimpositions suggests that an uncritical acceptance of superimposed sequences may not be the best way to arrange phases in Australian rock art.

To sum up, McCarthy's sequence of painting styles is:

1. Stencils; 2. Simple naturalistic figures; 3. Mimi, X-ray, Wandjina and other complex styles found in the north-west of Australia.

As far as I know, McCarthy has not published any more detailed discussion of the evidence which supports this sequence - it is apparently based on a cumulative impression gained during his extensive fieldwork. There is no painted site equivalent to Port Hedland, containing paintings representative of each phase. The superimposition sequences to which he referred are of local significance only, because the styles involved are spatially restricted - X-ray over Mimi in Arnhem Land, Wandjina over Bradshaw figures in the Kimberleys. He did say that in Arnhem Land "the basic naturalistic art was ... abandoned" (40), and replaced by the more complex styles - this is an important link in the sequence, but unfortunately no evidence is available at present in McCarthy's work, or in other Arnhem Land studies, for this assertion.

The main theme in McCarthy's discussion of Australian cave paintings is diffusion theory. Following Davidson, he has also used this concept to explain Aboriginal material culture, which he interprets as being almost entirely derived from sources outside Australia.

It has been shown in various papers, particularly those of Davidson and myself, that diffusion from Melanesia and Indonesia has been the most important process operating for the advancement of aboriginal culture, and that, left to settle their own economic future, little material progress would have been made by them towards a higher cultural status. Thus there is no question of a natural historical development taking place within Australia, and it is only in areas benefiting by diffusion that any real progress was made. (McCarthy, 1957a: 95)

He has made it clear in "Art of the Rock Faces" that this harsh judgement also applies to Aboriginal art (1964: 38).

If Australian art styles are derived from Indonesia and Melanesia, one would expect to find samples of them in these areas. This is particularly true in the case of the north-western styles, which are supposed to be recent
imports. Otherwise one would have to suppose that, as soon as a style was passed on to the Aborigines, it instantly died out in its native land. As McCarthy is so strongly in favour of Diffusionist theory, it is his responsibility to present comparative evidence for this point. He has not done this in any of his recent publications on Aboriginal rock art.

In a paper titled "Aboriginal Australian Material Culture: Causative Factors in its Composition", which was published in Mankind in 1940, McCarthy listed Australian culture traits which were also found in the adjacent areas to the north. He discovered some parallels between design elements in the two regions, e.g. concentric circles, "sun" motifs, cup and ring motifs, and concentric diamonds, and deduced from them that these elements had diffused into Australia from the north. The basic problem of this brand of diffusionism is that most of the motifs used to demonstrate culture contact are extremely simple. For example, see Fig. 9 in McCarthy's article, which shows concentric diamonds on an Aboriginal shield from the Murray River, a carved tree in New South Wales, and on a bark belt, a clapstick and a bone dagger from various parts of New Guinea and Torres Strait. All these concentric diamonds do look more or less alike, but they also reveal that this design is so simple that it is easier to envisage it being invented independently by every woodcarver who has ever decorated a flat surface with incised designs than to believe that it was transmitted from group to group under rigid cultural control. This technique of selecting specimens showing individual design elements, is now discredited by most art historians except hard-line diffusionists. The forms involved are almost always simple patterns, and independent invention could easily explain their presence, even in widely separated populations.

McCarthy's assertion that Aboriginal rock art styles has been derived from the north may have been influenced by the parallels (and implied relationship) which he found in decorative art motifs. The only Australian motif (as distinct from separate design elements) which McCarthy correlated with Melanesian art was the Wandjina figures found among the Kimberley cave paintings. Plate AB of the 1940 article illustrates the parallels which he found; in my opinion they are not convincing - these specimens display only the partial similarities which can be expected in any comparative situation.

On the other hand, Heine-Geldern, in a diffusion-orientated anthology compiled by Fraser, examined the tribal art styles of Southeast Asia with a view to
reconstructing the art history of this area, which would relate to Australian art if there was a link between the two regions (1966). But none of the items (from Assam, Vietnam, Borneo, Celebes, Sumatra, Nias, Java, Flores, Tanimbar Islands) which he illustrates bear any resemblance to any Australian Aboriginal art forms (although there are obvious parallels with Melanesian styles).

In my opinion, McCarthy's hypothesis of the diffusion of art styles from the north into Australia is not justified by the evidence he has presented, or by any innate characteristic of the geographical or cultural situation. To play the Devil's Advocate - it is not impossible that Aboriginal art styles are Australian in origin, and that the presence of the spectacular and complex styles in the north-west is the result of some other factor particular to this area, and not connected with the proximity of Melanesia and Indonesia at all.

This concludes the discussion of the application of archaeological techniques to Australian rock art. McCarthy's theories of Australian art history, and an examination of his reliance on superimposition studies, have constituted the greater part of this section, for the basic reason that his work has hitherto constituted the only comprehensive archaeological study of the rock art of this continent.
Chapter 3

Classification and Terminology of Australian Rock Art

One of the most informative types of rock art study used in Australia in recent years has been quantitative analysis, especially when it reveals patterns of various kinds which might not be deduced from simple observation of the art (see pages 48-52). The use of quantitative analysis in art studies is dependent on the same prerequisite as stone tool studies require, namely, typology. In other words, you can't count the sheep until you decide how they differ from the goats.

From the general nature of Australian rock art, it would seem that a simple typology, with a small number of discrete categories, would be easy to construct, because the term "rock art" does label a single phenomenon with a few simple subdivisions. Among the figurative representations found in Australian art, subjects are limited, and their outlines are extremely simplified and omit most fine details of form (e.g. musculature of animals and human figures - compare with European Paleolithic and South African Bushman art). Within the outline, there is almost no presentation of surface features, and no use of shading to give an illusion of perspective. Standard presentations of each subject are found throughout the whole continent - e.g. women's breasts are always shown as projections from the sides of the chest. This lack of detail and visual effects cuts down the number of distinctions needed in a typology. In the case of non-figurative art, the number of geometric forms which were used in Australia, and the combinations of basic forms, is really very small when compared with, say, South East Asian folk art (see illustrations in Heine-Geldern, 1966). The forms used in Australian rock art are generally simpler than those found in recent historical portable and temporary art made by Aborigines, such as Arnhem Land bark paintings.

Even if the traits found in Australian rock art are few and relatively uniform, if different writers use different names for them, the result is instant complexity. This is what has happened (see page 48).
After a long period with no co-ordination between the terminologies used to describe art in different parts of Australia, McCarthy attempted to set up a standard nomenclature. He opened the question in 1966 at the General Meeting of the Australian Institute for Aboriginal Studies, and then circulated two papers to interested members of the Institute, setting out his own scheme for an Australia-wide terminology, and discussing comments made by other archaeologists (McCarthy, 1966a and 1966b). The end product was an article in the Institute Manual No. 4, *Australian Archaeology: A Guide to Field Techniques*, called "Recording Art on Rock Surfaces". The editor of the volume, Mulvaney, said in the Introduction:

The material presented here is the considered opinion of workers with considerable field experience, and while it is appreciated that recommendations cannot be made binding upon fieldworkers and that sets of rules cannot be laid down, if the suggestions of this book are emulated more objective recording should result. (I)

The main features of McCarthy's nomenclature were also incorporated into the site cards which used to be circulated by the Institute to anyone who discovered or recorded rock art. These cards are still used by the N.S.W. National Parks and Wildlife Service in its basic catalogue of Aboriginal sites. This scheme is basically the same set of terms which McCarthy used earlier in the Australian Museum book *Australian Aboriginal Rock Art*, and in many other publications. McCarthy has therefore had a virtual monopoly on the vocabulary of Australian rock art, but this may be because of lack of interest on the part of other writers. Only the specialist "consumer", who is accustomed to reading professional journals and overseas publications, has any access to alternative systems of classifying prehistoric rock art.

For this reason it is necessary to examine McCarthy's nomenclature and his methodology, in order to test it for clarity and usefulness. I shall concentrate on the final version in the Institute Manual, although the preceding papers sometimes help to show how the scheme has been formulated. McCarthy commenced the article in the Manual by proposing "major terms" for Australian rock art. These are "engraving" or "petroglyph" and "rock painting" or "cave painting" or "pictograph". The rest of the article implies a rigid separation of these two basic types, which are always discussed separately.
Then follows a definition of "style".

'Style' is the term used for the total design or pattern of a figure, whether it be in outline, linear, solid, or bear a line design. It is the final composition of the engraved, scratched, abraded, pecked or painted marks with which a figure is depicted - that is, the manner in which the marks of the technique are distributed in a figure. (McCarthy, 1968: 125)

He next discusses "regional art", e.g. "the Kimberley paintings, western Arnhem Land paintings and Laura paintings, or the Sydney-Hawkesbury petroglyphs" (126), and designates the term "type" to describe these regional groups of rock art, in preference to "style" and "school", which have been suggested by other writers.

Then he describes five "Petroglyph Techniques": Abraded, Engraved, Scratched, Pecked and Pecked and Abraded, and lists various sub-headings under these five terms.

1. Abraded
   Groove : straight
   Grooved outline : made with finger
   Grooved outline : made with implement
   Grooved outline + interior surface
   ... etc (128)

"Rock Paintings or Pictographs" are sub-divided in two ways - firstly into four techniques: Drawing with dry pigment, Painting, Stencilling and Paint splattered by hand or brush, and secondly into Monochromes, Bichromes and Polychromes. Sub-headings are listed under the latter terms.

Monochromes
   Stencil
   Splattereded
   Imprint (human hand or foot usually)
   Silhouette
   Silhouette + slits
   ... etc. (131)

From the context of the discussion in several parts of this article, and explicit statements in the preceding papers, it is clear that these sub-headings listed under the main divisions of Engravings and Paintings are McCarthy's "styles". That is, "silhouette" is a Style of painting, in the division Monochrome.

Before going on to describe methods of recording rock art (with which I
McCarthy suggests a nomenclature of "Linear Designs", e.g. "circle, oval, rectangle, diamond ... : striped, sectioned, spoked, gridded .... spiral, meander, looped design, ..." (136) He does not define "linear designs" in the Manual article, but in the second preceding paper (McCarthy, 1966b), he used the term linear "for non-representational line designs including the geometric" (6).

I shall now state my objections to this scheme. Firstly, there is a rigid division in all McCarthy's publications between rock engravings and cave paintings, which he always discusses separately in mutually exclusive sections of his publications. At no stage does he make comparisons between them, or use the same terms to apply to analogous forms in the two media, or in any way suggest that they might be related. For example, a figure which is represented by a solid, continuous area of engraving or painting is called by McCarthy "fully pecked" if it is engraved, and a "silhouette" if it is painted. But obviously both cases display a common artistic intention - to cover the whole surface of the figure with marking. The lack of common terms for these artistic characteristics ignores the simple fact of availability of different types of rock surface in different areas, and the subsequent possibility of this fact influencing the artists' use of different media for executing the same motifs. One areas may have caves with large expanses of light-coloured wall surface (e.g. southeast Cape York), while another may have no caves at all, but contain exposed outcrops of smooth rock surfaces, suitable for carving (e.g. the Manunda-Yunta area in South Australia, which includes Panaramitee). Despite these differences in the availability of the media, many Australian motifs are found in engraved and painted versions identical in all respects except those which are dependent on technique. In the Sydney area, where caves and suitable rock outcrops are both available, the painted art and the engraved art are extremely similar, with corresponding range of motifs, scale, style of representation (Cox, Maynard and Megaw, 1968). This indicates that there is a need for comparison between these media, and terms of reference which can be used to refer from one to the other, which are not admitted by McCarthy's approach.

The main weakness of McCarthy's nomenclature is that it does not have a consistent hierarchy of concepts, with levels of description which allocate items to major and minor categories according to stated principles.
Instead it tends to be a finite list of all the discrete combinations of different phenomena which have ever been observed in Australian rock art - a set of pigeon-holes. If a figure embodying a new combination of characteristics were to be discovered, a new pigeon-hole would have to be created. This approach is demonstrated by the long lists of different types of rock art on pages 128 -132 of the Institute Manual (McCarthy, 1968). For example (references to illustrations deleted from following quotation):

Monochromes

Stencil
Splattered
Imprint (human hand or foot usually)
Silhouette
Silhouette + slits
Outline
Outline + interior design
  Barred, striped, broken line, gridded, curvilinear, cross-hatch, crescentic, composite, linear, dotted, or other interior design to be added where relevant to the description of each figure, as e.g.
  Outline + interior design + barred.
Outline + pale silhouette interior
Outline + partial silhouette
  Commonly an animal with the head, neck, tail, limbs, fins, etc., painted in the solid in an outline or striped figure.
Linear (including geometric)
Stick-figure

These various categories (or pigeon-holes) are grouped under headings and sub-headings which reflect McCarthy's judgement of the most important distinctions between different art forms. In one of the papers preceding the article in the Institute Manual, he said:

The use of monochrome, bichrome and polychrome is now almost universal as the basic sub-division of painting and may be adopted without hesitation. (McCarthy, 1966b: 8)

All categories of painting are therefore listed under these three headings - so the first test which must be applied to any painted figure is counting the number of colours used in it. This means that two paintings of, say, kangaroos, identical in all respects of form, size, decoration and technique, would be classified by McCarthy into different major groups if one of them had an eye painted in a different colour. In the description of a large site, categorised according to McCarthy's nomenclature, these two figures could be pages apart.
Any system which groups items according to headings and sub-headings is a classification, of a sort. But in my opinion, the chief test of the value of a classification system for art is whether the items which are placed together in a group really share a common design characteristic which is basic to their nature, and whether items which are placed in different groups are fundamentally dissimilar.

McCarthy's system does not pass this test. To use the cases I have already explained - two figures which both consist of a solid area of marked surface would be separated into two mutually exclusive groups if one was painted and the other engraved. Therefore, in a system of art classification, a technical criterion (related to the available surface) overrides a design factor (related to the artist's judgement). On the other hand, two paintings whose styles are quite dissimilar (e.g. one which is simple and undecorated and another which is very intricate and embellished), would be put into the same initial category, Bichrome, if they happened to be executed in two colours. In each case, a criterion which is important (i.e. more likely to make a useful distinction between different kinds of art) is ignored in favour of a trivial one.

The categories listed under a sub-heading are not defined according to consistent principles. For example, on page 128 of the Institute Manual, McCarthy lists six categories under Abraded:-

Groove : straight
Grooved outline : made with finger
Grooved outline : made with implement
Grooved outline + interior surface : a) fully
b) partly
Grooved outline : linear (including geometric)
Grooved outline : tracks

The first category is, therefore, defined by its form, the second and third by technique, the fourth by interior pattern, the fifth by form, and the sixth by subject.

The term "linear" is used throughout McCarthy's system, but it is not defined, even in a section titled Linear Designs. The common characteristic of the forms listed under this heading (e.g. circle, oval, rectangle, diamond, circle and dot, spiral, meander, looped design, connected dots, grid, etc.) is non-figurativeness. This usage is contrary to the usual meaning of "linear" in art criticism. Thomas Munro, in Toward Science in
Aesthetics, contrasted linear "styles emphasizing clear outlines of line and mass" with painterly "styles emphasizing blurred, flowing color, light, atmosphere, texture" (225). According to this definition, all Aboriginal art is "linear".

Despite McCarthy's designation of "style" as "the total design ... the final composition" of a figure (1968: 125), it is later made clear that "Style" is a specific descriptive distinction that comes after "Technique" and before "Motif" (which is not defined) (see pages 131 and 133). Thus:

- Stencil + solid interior
- Stencil + interior design
- Silhouette + outline in another colour
- Silhouette + outline and interior design in another colour

are all styles of bichrome paintings. These are quite narrow categories, confined to one aspect of a figure's total appearance, not the "final composition" previously referred to.

Lack of definitions, and unclear definitions, detract from McCarthy's nomenclature. For example:

**Petroglyph Techniques**

Australian techniques are now defined as follows:-

1. **Abraded.** A groove in, or area of, a rock surface made by simple manual abrasion or rubbing with a stone, wooden or other implement.

2. **Engraved.** With the finger(s) or other tool in a soft limestone wall (as at Koonalda), or with a stone or other implement in harder rocks.

3. **Scratched.** An engraving made by scoring a rock surface with a stone or other implement.

4. **Pecked.** A groove in, or area of, a rock surface formed of pits, cuts or gashes, or formed by pounding or battering with a stone or other implement. ....

5. **Pecked and abraded.** A combination of pecking and abrading in different parts of a figure.

An intaglio is an engraved design carved in the surface of a hard material. In Australia the term has been applied to pecked figures in which the whole surface has been treated by percussion, or in which the outline or design consists of a broad and deep pecked band, both of which are more correctly described as fully pecked. Many figures were made with short cuts or gashes, and these may, strictly speaking, be termed intaglios. The latter forms a useful term for differentiating the percussion from the gashed or cut series in the interior and northern Western Australian sites, a distinction which few writers have made in the past. (126-7)
These definitions are inconsistent and unusable. Specifically, one cannot, from them, deduce answers to the following questions.

1. From the criteria given, what is the difference between abrading, engraving and scratching? The same implements are mentioned in each description, and they all involve horizontal movement of an implement through the surface of the rock. A scratch might be deduced as a shallow groove. Earlier in the article, McCarthy says "Engraving ... applies strictly to incising, scratching and cutting techniques and not to percussion methods" (125), which means that one term has been used to describe another, and then defined as different from it. Moreover, it is confusing to use the term "engraving" for some specific technique, when this word has previously been designated a "major term".

2. If abrading makes a "groove", why use the same term for the end-product of pecking? "Groove" implies a continuous line, and is, in fact, the necessary result of horizontal abrasion. Pecking, however, necessarily produces small pits, and it is only conscious arrangement of individual marks which produces a line of adjacent pits (abraded groove = technique; pecked groove = form).

3. The argument about intaglios is difficult to follow, unless it is related to the usage of this term in "The Rock Engravings of Port Hedland" (McCarthy, 1962). The third and fourth sentences contradict each other. What is the different between "percussion" and "gashed or cut" (see the quotation above, in which these are specifically distinguished)? Why not drop the term "intaglio" altogether? In Classical archaeology it refers to an incised gem, like a cameo.

Many Australian fieldworkers use some of the terms which McCarthy has made popular, but I doubt if anyone except McCarthy could apply the whole of the scheme set out in this article - there is just not enough clear explanation of terms and usages, and too many inconsistencies.

I regard this nomenclature as an extremely personal set of terms which McCarthy has evolved during his long study of Australian rock art. Its development can be traced through his writings.

However, at the conclusion of his discussion of the nomenclature, McCarthy stated that it "is not an official or final system, nor is it an exhaustive one; it is offered as a guide in deciding on terminology in
the description of rock art. The general adoption of this approach will undoubtedly advance study of the whole subject of rock art in Australia, clarify the vexed problem of terminology and simplify comparative studies." (133). McCarthy's open-minded attitude has encouraged me to continue with the said vexed problem, and I have tried to construct a rather different structure, using many of the terms and concepts which McCarthy has made into the stock-in-trade of Australian art studies.

The rest of this chapter consists of the description of a scheme of terminology which I wish to present as an alternative to McCarthy's.

The main principle which I have adopted is the separation of discrete characteristics of the rock art into traits, which can operate independently in describing an individual figure. As an example, consider a painted figure which includes two different colours. Instead of a single label - "bichrome" - this figure would be the subject of a multi-trait description which would include the two colours as traits, along with other traits designating aspects of the figure's technique, form, motif and other special characteristics. Such a system closely resembles the principles underlying the use of punch cards or computerised data storage programmes, where different locations on the card or tape record the presence or absence of selected traits, and the sum total describes the subject.

There are five levels in the descriptive process - Technique, Form, Motif, Size and Character. An individual figure can be described in terms selected from all five levels. I would like to refer now to the lists of terms used in the figures which follow this page, and begin explaining the organisation and names which I have used in them.
TECHNIQUE
ROCK CARVINGS or ROCK ENGRAVINGS or PETROGLYPHS (subtractive process)

A. Friction
   i. SCRATCHED (single stroke)
   ii. ABRASED (repeated friction)
   iii. RUBBED (broad surface) makes a RUBBED AREA

B. Percussion
   i. POUNDED (direct percussion)
   ii. PECKED (indirect percussion) makes a PIT (round, oval, deep, shallow, etc.)

C. Rotation
   DRILLED

ROCK PAINTINGS or CAVE ART or PICTOGRAPHS (additive process)

D. Mechanical
   i. STENCIL
   ii. IMPRINT (red, yellow, black, white, etc.)

E. Delineated
   i. PAINTING (wet)
   ii. DRAWING (dry)

Punctuation for Coded Description
& : used to join descriptions of different parts of one figure which are done in different techniques - e.g. Bii & Aiii.
/ : used when one technique is superimposed on another - e.g. Bii/Aii.
FORM

Code No.

1. a. scattered marks  
   b. dotted line  
   c. continuous line  
   d. band  
   e. solid area

2. a. does not enclose space  
   b. partially encloses space  
   c. encloses space  

   use of different colour or technique

3. a. no interior infill  
   b. interior infill

4. a. scattered marks  
   b. dotted line  
   c. continuous line  
   d. band  
   e. solid area  
   f. partial solid area  
   g. blank area

   i. dots  
   ii. dashes  
   i. stripe(s)  
   ii. bar(s)  
   iii. concentric  
   iv. other
FORM. (Cont.)

Punctuation for Coded Description

:  listing the aspects of a figure

:  1c, 2c, 3a.

& :  joining descriptions of different parts of a figure

:  enclosing the description of one part of a figure

:  (1c, 2c, 3a) & (1c, 2a).

/ :  joining elements which are present in the same part of a figure

:  1c, 2c, 3b, 4ai/ci.

X :  indicates multiples of elements comprising a single figure

:  (1c, 2c, 3a) X 5.

; :  joining description of form to descriptions of technique, motif and size.

:  Bii; 1c, 2c, 3a; NF, circle; 10mm.
Examples of names of figurative motifs:

Man, woman, human (no sex indicated)
Kangaroo, dingo, flying fox, echidna, animal (quadruped of unidentifiable species)
Emu, scrub turkey, bird (unidentifiable species)
Sawfish, eel, dugong, fish (unidentifiable species)
Crocodile, turtle, lizard, snake
Yam, plant
Boomerang, spear, shield, axe, basket, canoe
Human footprint, hand
Kangaroo track, bird track, lizard track

.............etc.
Non-figurative motifs:

Examples of names of non-figurative motifs:

Circle, oval, rectangle, diamond

Linked circles

Chain of circles

Row of circles

Connected circles

Group of circles

Bisected circle

Quartered circle

Spoked circle

Concentric circle

Spoked concentric circle

Line: straight, curved, wavy, looped, sinuous, zig-zag

Parallel lines, radiating lines, intersecting lines, maze

Spiral, chevron, U, concentric U, cross

(Common nouns used as names of non-figurative schema - no interpretation in favour of the referent is implied):

Rake

Herringbone

Star

Sun disc

Fame

Grid

Ladder

Amoeba

......... etc.
**SIZE**

**Absolute**

Measurement of longest dimension in feet and inches or metres and centimetres.

**Relative**

(Optional) Applies to figurative motifs only.

<table>
<thead>
<tr>
<th>Size Categories</th>
<th>Code</th>
<th>E.g. Human figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Larger than life size</td>
<td>LL</td>
<td>More than 6'</td>
</tr>
<tr>
<td>Life size</td>
<td>L</td>
<td>4' - 6'</td>
</tr>
<tr>
<td>Half life size</td>
<td>½L</td>
<td>2' - 4'</td>
</tr>
<tr>
<td>Miniature</td>
<td>M</td>
<td>Less than 2'</td>
</tr>
</tbody>
</table>
CHARACTER

Examples of distinguishing characteristics:

Shape
Elongated
Stick-figure
Enlarged head
Enlarged genitals
Contorted posture
Showing movement
"Flexible" limbs
Profile depiction
Realistic body contour
Wandjina, Mimi, Kurangara, X-ray, etc.
Elaborately decorated
Very detailed. ..........etc.

Association
Wearing headdress
Carrying object in hand
Being carried
Struck by weapon
Striking other figure
Copulating
Other
The first important point is the separation of technique from those other aspects of any figure which could loosely be grouped under the heading of "design". This is because there is a basic difference between technique and design - technique is determined by the tools and materials available and chosen by the artist, but design is not affected by any physical factors except the size of the surface used. It is easy to distinguish the purely technical aspect of a carving or a painting - it is the method by which marks are put on a rock surface, and a description of the shape, size and texture of these marks, but it excludes any statement about the way in which the marks are arranged, or the number of them.

**Rock Carvings or Rock Engravings or Petroglyphs**

All these terms refer to marks made by subtracting from a rock surface. "Engraving" is a term which derives from metal-working. A hard metal tool, called a burin or graver, is used to gouge out a smooth, continuous channel across the surface of a soft metal. As far as I know, there are no rock carvings in Australia which correspond in appearance or presumed method of manufacture to this kind of "engraving". But a quick survey of the sequential bibliography published with the Australian Institute of Aboriginal Studies Newsletter shows that, in the past ten years, at least eleven authors have used the term "rock engravings" in the titles of at least 25 articles on Australian rock art in every state. So there is no point in trying to dispense with the term, even though it refers to a specific technique which is not found in Australia, although it does occur among rock engravings elsewhere. In South Africa, some Bushman carvings are composed of smooth, even grooves which really do resemble incised engravings on metal plates. Willcox uses the term "engraving" to distinguish these from "peckings", which are composed of chipped marks, and the term "petroglyph" to apply to all carvings (1963: 54). In the Australian context "engraving" should be designated a general term, synonymous with "rock carving" or "petroglyph" (which is used occasionally -

* For macro-photographs of engraved lines, and a detailed discussion of these techniques in metal-working, see Lowery et al., 1971.
personally I have an unreasonable dislike of it), and these terms used to
describe any process involving subtracting from a rock surface in order
to make a design. Confusion can be avoided by never using "engraving" to
refer to some specific type of process, in contrast to others.

Friction, Percussion, Rotation

There are three basic methods of using an implement (including fingers)
to mark rock subtractively - pushing it horizontally over the surface
(friction), pressure in the vertical axis by means of percussion, and
rotating a drill in one place to grind a hole.

I have learnt from practical experience that it is not always possible to
be certain about how a carving was made. This system of terminology is,
however, intended to be applied only to the degree that any individual
figure permits reasonable deductions to be made. A perfectly preserved
figure could be confidently described in every detail. A badly weathered
figure might be registered only partially - so that if it was impossible
to say whether a carved figure had been made by friction or percussion,
then it would be described only as an "engraving" (i.e. made by a sub­
tractive, rather than an additive process).

Scratched, Abraded, Groove, Rubbed, Rubbed Area

The first two subdivisions under carvings produced by friction, scratching
and abrading, must, by their nature, produce a continuous linear groove.
The term "scratched" is used when an engraving consists of shallow, finely
incised lines which are almost certainly the result of running a sharp
instrument once over the rock surface. There is no difficulty in
distinguishing these from "abraded" grooves, which are the result of
repeated friction along the same line. The shape of an abraded groove will
vary according to the implement used, the type of rock and the technique
of the operator. Abrasion with a sharp tool tends to produce the common
V-shaped groove in most rocks. Devon Downs Type B carvings are U-shaped
in cross-section - apparently the soft limestone allowed the artist to
chisel out a broad groove, but the technique is still basically abrasion,
and should be thus designated. It is not worth creating new categories to
describe rare occurrences like Devon Downs, because of a slight variation
from the common form of abrading found on hard rocks. The finger markings
in Koonalda cave were also made by friction, but as they are unique in
Australia, it is hardly worth creating a separate term for them. A case
like this can best be handled by a special description.

Sometimes, instead of a groove, an area of the rock surface is rubbed smooth. This technique is usually found in conjunction with others - e.g. a pecked outline with a rubbed area inside it.

Pounded, Pecked, Drilled, Pit

There are two definite types of percussion treated carvings which are found in Australia. Mountford observed Aborigines in Central Australia making designs by pounding the surface of patinated rocks with lumps of stone held in the hand. This direct percussion bruised the outer coating and produced shallow impressions which broke through the patination (usually dark coloured) and exposed the unweathered inner surface (Mountford, 1955). There are also many prehistoric examples of carvings apparently made by this method, including many sites in the Pilbara area of Western Australia (Wright, 1968). The individual pits are shallow, and distributed in a manner which suggests the lack of fine control resulting from direct percussion. A line made by pounding looks like this: ~ and the edges of solid figures are rather diffused.

The result of this hammer dressing is quite different from the ancient carvings found in Central and South Australia (e.g. Panaramitee) which consist of deep nicks in the rock surface. These engravings are more precise than the shallow poundings, and it seems very likely that they were made by indirect percussion, using a sharp pointed tool which was deliberately placed in position and then hit with a hammerstone. The precise lines and clean edges of these carvings seem to indicate the increased control which would result from indirect percussion. The term "pecking" has often been used to describe these deep carvings; I propose "pounded" and "pecked" to distinguish carvings apparently executed by direct and indirect percussion, respectively.

I do not claim that it will always be possible to determine the method of manufacture of every single carving in Australia. This distinction is analogous to that between a flake and a blade in stone tool typology. Indirect percussion must have been used to make those prehistoric stone blades which are very long and thin, but there are intermediate forms (between an ordinary flake and a good blade). Although one cannot demonstrate, in every single case, whether direct or indirect percussion was used, it is still useful to distinguish between the two types (flake
and blade), because there are many more definite cases than indefinite. Experimentation with rock engraving techniques (as in the stone tool field) might clarify this distinction and aid diagnosis of the Aboriginal examples. Weathering can also curtail description of a figure at this level. An ambiguous rock carving can still be described by the appropriate term from the next highest level in the hierarchy - in this case, "percussion".

It has been suggested that some carvings in soft rocks were made by drilling - e.g. the punctures associated with abraded grooves in the Type C carvings at Devon Downs, and carvings at Port Hedland which McCarthy duplicated by rotating the point of a whelk shell. I propose that the term "drilled" should be used where there are particular circumstances to suggest it, or the contour of the pits indicate that rotation was used to form them.

A "pit" is the result of any percussion or rotation. It is a small depression in the rock surface, roughly circular or elliptical, and deep or shallow, depending on the circumstances of its manufacture.

Rock Paintings or Cave Art or Pictographs

These terms refer to marks made by adding some coloured material to rock surfaces. "Pictograph" has been used in America to describe all such figures but it has never been popular in the Australian literature. It is, however, difficult to think of an alternative term which applies to the dry crayon drawings as well as to paintings done in mixed ochres. "Rock Painting" has been used most frequently in titles listed in the A.I.A.S. bibliography. "Cave Art" covers both forms, but is not specific to the technique of adding pigment to a surface, except in the sense that these figures could only survive for any length of time when they are executed in a sheltered position. Therefore, as in the case of "engraving", I suggest the use of all these as general terms, without rigid etymological control. I regret the later use of "painting" for a specific technique, but in this case there is no satisfactory substitute in common use. It is impractical to introduce a completely new term, such as "mural", as it is unlikely to be accepted.

Mechanical, Delineated, Stencil, Imprint, Painting, Drawing

There is a basic difference between a figure which is delineated on the surface by the artist, and an object which is represented by the mechanical processes of stencilling and imprinting. A stencil consists of a blank space
surrounded by a border of splattered paint. The quality of the margin shows that some object has been held against the wall so that a negative impression of its shape will remain when paint is sprayed around it. The mark made by pressing an object, such as a hand, which has been dipped in wet paint, against a rock surface is quite characteristic. When the ochres have been ground up and mixed with a liquid before being applied to the rock surface, the painted area is evenly coated with colour. When dry pigment is rubbed on the rock like a crayon, the high spots of the surface are more thickly coated than the low spots, giving a streaky effect to the drawing.

It is always possible that more than one technique will be used to make up a single figure. The same terminology can still be used, with special punctuation to represent the combination of techniques. In Arnhem Land, some hand stencils are decorated with painted designs inside the margin of the sprayed surround. They would be described as D & Ei. The pecked outlines of some carvings in the Sydney area have been subsequently abraded, which could be shown as Bii/Aii in a coded description.

Form

There are many words which refer to the visual organisation of the marks which make up a figure, such as "form", "composition", "treatment", "design", "pattern", "motif" and even "style" (as used by McCarthy). I have preferred the term "form" to describe the organisation of dots, lines and masses which comprise individual figures. The same criteria of form apply to all figures, regardless of technique.

I do not intend that this section of the terminology should be capable of describing every aspect of the appearance of a figure. According to the scheme given in the diagram,  and  have the same form - they can both be described as 1c, 2c, 3a. Discriminating between these figures is reserved for the next section of the terminology, Motif. On the other hand,  and  are different forms - the latter is distinguished from the previous descriptions as 1c, 2c, 3b, 4ciii.

The arrangement of the diagram under the heading "Form" exploits the logical possibilities of two-dimensional visual organisation in Aboriginal art. A figure may consist of a group of discrete pits or grooves or dabs of colour, associated so that they form one unit, but with nothing to take the description any further. They would therefore be registered simply as
"scattered marks", or as la in a coded description. A line, on the other hand, may enclose an area, or not, or form a partial enclosure if there is only a small gap between the ends — 2c, 2a and 2b respectively. Three kinds of line are distinguished — a row of marks with small spaces between them, a continuous line with no divisions, and the term "band", which describes a thick line which is made up of more than one row of pits, or more than a single stroke of paint. Although it is thicker than a single line, a band is still a line, having length and direction, rather than a solid area.

I do not claim to have eliminated every element of value judgement from the description of form. It would be nice to be able to do so, but it is probably impossible, except perhaps by using a series of mathematical definitions — e.g. a figure is a band rather than a solid area when its length = more than 5 times its width. Such a system would be very clumsy. My aim is to compose clear definitions of terms and an organisation which will cut individual differences in judgement to a minimum level, while still maintaining a workable system.

A solid area is, therefore, a continuously treated surface which is more bulky than a line or band. It cannot enclose an area within itself — anything inside its margin would be an infill.

An infill is any mark found within the boundary of a figure. The term is not meant to imply the sequence in which the different parts of the figure were executed. Close examination might show that the interior area was completed first, and then a line traced around its margin. However, the present object is to describe the item as it now stands. The infill may consist of scattered marks, lines, or solid areas of colour or engraving. "Partial solid area" is used when only part of the area inside the outline is thus treated. "Blank areas" can occur as infill within the margin of a solid figure. A few subheadings, describing common interior patterns have been included. "Dots" are roughly circular; "dashes" are short lines; "stripes" are lines parallel to the long axis of the figure; "bars" are at right angles to the long axis; "concentric" lines follow the course of the outline.

In the same way that weathering may prevent a detailed diagnosis of technique, it can also (in practise) affect the description of form. There may be indications that the present form of a faded painting is not the
same as that originally put down by the artist - e.g. a solid red figure may have a few flakes of friable white pigment indicating a former outline. Each observer has to choose whether to register a figure as it now stands, or as he reasonably believes the original form to have been.

If it is desirable to present a complete description of form as a continuous written statement, special punctuation can be used to organise the elements. One convenient way of using the system for fieldwork or research is in a column diagram, as shown on pages 112-3. This diagram constitutes a way of registering all the features of a figure's form. I envisage that it could be used in any situation where it is necessary to make a description of a group of figures - e.g. in fieldwork, as part of the process of recording a site, or even as a substitute for graphic recording in some circumstances; in research, as part of numerical analysis; and occasionally in the finished publication, if it was desired to present such a detailed description.

It is also convenient to have shortened versions of these formal descriptions, because it is not convenient to refer always to a "red continuous line, encloses space, interior infill, red continuous line stripes/yellow solid area". The obvious abbreviation, for ordinary usage, is "red outline with red stripes and solid yellow infill". I therefore propose the following list of terms for describing form, which are derived from the larger system, to be used in circumstances when it is necessary to describe figures as briefly, but accurately as possible.

Group of scattered marks (1a)
Dotted line (1b, 2a)
Line (1c, 2a)
Band (1d, 2a)
Dotted outline (1b, 2c)
Outline (1c, 2c)
Thick outline (1d, 2c)
Solid figure (1e)

These terms can be combined with techniques - "abraded outline", "pounded band", "pecked solid figure" (McCarthy's "intaglio"). The various colours
of paintings and drawings can be inserted at this stage in the descriptive system.

Motif

As well as being composed of lines or dots or solid areas, a figure has a shape, i.e. the space occupied by, and the configuration of, the lines and dots or whatever marks make up that particular figure. Shape is independent of form (as used in the previous section of this terminology). In any body of art, certain shapes tend to recur.

It is convenient to give names to these recurring shapes. When the art is prehistoric, the name can only be suggested by the appearance of the figure. Some figures resemble objects which are familiar to the observer, and are therefore named for these objects. I may call a figure a "kangaroo", because the arrangement and relative size of the masses which comprise its shape remind me of the shape of an actual kangaroo. But I cannot be certain of the original intention of the artist who drew the figure. His subject - the entity which he intended to represent - may have been a real kangaroo, or another member of the macropod family - Aboriginal drawing is not usually naturalistic enough for the observer to distinguish the particular species. Or he may have wished to represent the spirit of a kangaroo, or the totemic ancestor of all kangaroos, or a human ancestor who sometimes looked like a kangaroo, or even a real human individual, who was a member of the kangaroo totemic group and was therefore symbolised by his totem animal. Because of these alternative possibilities, the observer cannot make any assumption based on the identity of the figure.

It is admitted that the artist has modelled his image on the shape of a kangaroo, but this does not affect our interpretation. A Sydney resident who turns to the sporting pages of his evening paper, and sees a cartoon showing a rabbit playing football with a tiger, does not assume that real rabbits play football with real tigers. And a Melbourne resident, who may not be able to interpret the symbolism (Souths playing Balmain) is still not justified in making any zoological assumptions based on the picture, because he is aware of the role of cartoons in our culture.

This was the mistake made by T.M.O'C. Maggs, in drawing conclusions from a quantitative analysis of motifs in Bushmen rock paintings. From his conclusions, it would appear that he assumed that the paintings invariably represented real human beings and real animals.

... in no case were both indentifiable males and indentifiable females shown together. (in the paintings) An interpretation
for this is that it indicates strict division of the people concerned into groups based on sex and is probably a reflection of strict division of labour between the sexes (Maggs, 1967: 101)

Interpreting all pictures of animals as items of diet, he compared the number of painted animals of different species with two samples of actual Bushman meat consumption, an archaeological example and an ethnographic one. Not surprisingly, there were large discrepancies - elephants and other large animals were "over-represented" in the paintings, and Maggs interpreted this as "optimism" on the part of the artist-hunters - i.e. failure to represent their true economic situation. These conclusions about sexual division of labour and diet are invalid if any alternative interpretation of the rôle of the paintings is considered - if for example, large animals are important in Bushman mythology.

My use of the name "kangaroo" for a particular figure therefore implies only that the figure reminds me of a kangaroo. It is convenient to use this name in order to distinguish this figure from others which remind me of emus, fish, human beings, boomerangs and other familiar objects. The term which I have used for these shape-categories is "motif". A motif is a recurrent visual image which has a particular arrangement of components. The precise shape of individual figures which have the same motif can vary to a certain extent, but their basic visual organisation remains constant.

The art historian, Gombrich, has studied the way in which motifs (recurrent shapes) come to occur in any art which is under cultural control (i.e. almost all art except that of very small children). In Art and Illusion, he postulated that we all have mental templates of objects which differ to some extent from the real shape of the objects themselves. This mental template, which Gombrich called a "schema", affects our perception of an object, our perception of a picture of the object, and, ultimately, if we are artists, the image which we make of the object. Motifs are therefore the objectified expressions of schemata - the standardised pictorial forms which result from consistent mental templates (consistent within the cultural group of the artist). Egyptian art is an easily-recognisable example of the operation of this process (see the cartoon which Gombrich used as the frontispiece of Art and Illusion, (Fig.3: 1).

Psychologists studying children's art have observed how schemata are formed during the process of acculturation (Lowenfeld & Brittain, 4th edition: 138-9). Bartlett showed how adults alter perceived images until they conform
1. Drawing by ALAIN

© 1955 The New Yorker Magazine, Inc.

Fig. 3.1 (From Gombrich, 1968) The frontispiece of Gombrich's work on the role of schemata in art style, Art and Illusion.
to known schemata. By a sequence of copies, his subjects converted an Egyptian hieroglyphic resembling an owl (an exotic motif) into the more familiar shape of a pussycat (see Fig.3: 2).

Munn used the term "schema" to describe design elements in contemporary Walbiri art (1966). These should really be understood as "objectified schemata" - the concrete results of Walbiri mental templates. This usage of "schema" may be justified in the case of ethnographic art - Munn could argue that she is deducing mental symbolic systems from the informants' explanation of motifs.

In the case of prehistoric art, one assumes that mental schemata operated to produce recurrent motifs. However, as one cannot study prehistoric thought processes in the way that psychologists study modern schemata, I have simply used the term "motif" for a namable shape-category which includes large numbers of individual figures.

The motifs that I have been discussing, which resemble objects familiar to the observer, are called "figurative". Another group of motifs is "non-figurative". In the case of a non-figurative motif, the uninformed observer cannot arrive at any helpful associations for naming the figure. This may be because its shape is too general, like a circle, which could be associated with any of a variety of circular objects (moon, waterhole, breast, fruit, egg, etc.), or because the prehistoric artist has modelled the figure on some specialised shape which is unfamiliar to a modern observer. The artist may never have intended a design to bear any resemblance to a natural object. The solution to the problem of naming a non-figurative motif is to use terms from the European vocabulary of geometry and design which best describes the shape of the figure - e.g. circle, chevron, undulating line, sun disc, grid, etc. Names given to figurative and non-figurative motifs - e.g. "kangaroo" and "circle" - have the same status in both cases, that is, they have no interpretive value, but are simply labels for recurrent arrangements of lines and shapes.

It is possible to observe the creation of figurative and non-figurative motifs in contemporary art. Although it is modelled on the form of natural objects, not all figurative art appears the same. It does not correspond to a "photographic record" of its subject's form, and all

* It is a truism that the camera does not produce a "realistic" image of its subject, but it is often accused of doing so.
As illustrating the first type, we may take the following series. The original drawing is a representation of the Egyptian 'mulak', a conventionalised reproduction of an owl, which may have been the basis of the form of our letter M.

![Original Drawing](image)

The elaboration in this series is obvious. The reversal of the direction of the wing curve by subject 3, and its doubling, at once suggested a tail, and thereafter the tail drops lower and lower until it assumes its proper tail position, and is greatly emphasised, in which process it is reversed twice more. The apparently disconnected lines in the original drawing are all worked into the figure, and the original beak mark is elaborated into a ribbon with a bow. Whiskers are introduced in due course, and the small lines on the back are multiplied and become shading.

A rather unusual figure, carrying a fairly strong suggestion of some realistic representation, becomes greatly elaborated into a familiar whole. Once this end has been achieved, simplification tends to set in again, and the whole progresses towards a truly conventionalised form.

Fig. 3:2 (From Lowenfeld and Brittain, 4th edition:139) Unfamiliar designs were reduced to familiar schemata by Bartlett's subjects.
figurative representations distort form in some way, but without making the depictions unrecognisable. If the distortion is so great that no resemblance remains between the subject and the representation, then it is non-figurative art.

It is possible to draw up a continuum of different representations of the same subject, for example, a human figure, which range from figurative to non-figurative (Fig. 3: 3). But there must be some stage in this sequence, at which point each viewer could no longer identify any aspect of the subject, if the figure were shown separately. However, this point would vary from viewer to viewer, depending on factors of experience, perceptiveness and culture. If the central figure in this diagram were separated from the others, an imaginative person may say that it is a human figure, but an imaginative viewer might just describe it as a "pattern". Alternatively, a pre-nineteenth century Aborigine might not recognise a rather shapeless blob with horns on it as being a picture of an animal, because there are no horned animals native to Australia (see Fig. 3: 4). He might say that this figure is a lagoon with two rivers flowing into it, or else he may just see it as an amorphous shape, and, if he is using Steward's terminology of Californian petroglyphs, call it "amoeba" (1929:207).

Coming back to prehistoric art, the distinction between figurative and non-figurative is therefore based on the viewer's unassisted capacity to interpret, and not essentially on the artist's original intention. So, whereas figurative and non-figurative representations may form a continuum in contemporary art, they form two discrete groups of motifs in prehistoric art.

The naming of motifs in publications introduces the possibility of variation between different writers. For example, McCarthy calls a series of parallel lines joined at one end by another line a "pubic fringe", which is a particular item of Aboriginal material culture - i.e. a figurative motif (see Fig. 3: 5). In the United States, the same motif is called a "rake" (for example, Steward, 1929: 205), but this term does not imply identification with any object, but is a term taken from design vocabulary - i.e. a non-figurative motif. Personally I would not call this Australian motif a "pubic fringe" unless it was part of a human figure. There is no way of incorporating this difference of opinion into the system. It therefore consists of two groupings - figurative and non-
Fig. 3:3 A continuum between figurative and non-figurative.

Fig. 3:4 A horned what-not
Fig. 3:5 (From McCarthy, 1962) Motifs which McCarthy identified as "pubic fringes"
figurative. However, individual writers' names for some motifs may vary slightly.

For this reason, it may sometimes be necessary to explain the names given to various motifs in a particular piece of work. For example, when I classified cave paintings in Cape York, I used the terms "man", "woman" and "human". The first two were used when the figure showed definite genital organs or breasts; if not, it was described as "human". I did not make a separate classification for anthropomorphic figures whose shape varied greatly from normal human proportions, but in another context, I would consider the addition of two extra categories - "male anthropomorph" and "female anthropomorph", defined by some resemblances to human beings, but with major distortions - e.g. grossly contorted limbs. As long as explanations and illustrations are adequate, there is no need to call for a standardised list of Australian motifs.

Size
As well as actually measuring the longest dimension of a figure, it may sometimes be useful, in the case of a figurative motif, to relate its size to the average size of the object on which the motif is modelled. I admit that this process is both subjective and approximate. For example, the size categories suggested for human figures assume that the model is an adult of average height. In the case of animals, birds and fish, these judgements would be even more approximate. It is best to regard this as an optional part of the descriptive scheme, and apply it flexibly to those situations where it would be most useful. There are wide variations in scale in Australian figurative rock art, from giant representations to miniatures. It may, therefore, be helpful to use these relative size categories for comparing and contrasting art in different areas; in which case their usefulness might outweigh the lack of accuracy in some instances.

Character
If a group of artists, when making figurative representation of the same or similar subjects, all tend to distort its shape away from "photographic reality" in the same way, the resulting figures will appear somewhat homogenous. They will constitute a sub-group within the motif. For example, a number of human figures with greatly elongated limbs and torsos
would stand out from a group which displayed more or less normal body proportions. Similarly, a group of non-figurative motifs may have characteristics which distinguish it from another group - e.g. embellished versus simple.

Some figures, therefore, need something extra added to their identification by motif. It is first necessary to take a broad view of Australian rock art, in order to describe norms from which some figures deviate. I think it is possible to come to a verdict on this, at this stage of research and publication in this field. As I stated in the early part of this chapter, the general character of most Australian figurative art is crudely naturalistic, faithful to the general proportions of the subjects on which it is modelled, but not very realistic, as European Palaeolithic and Bushman figurative art is. Nor is it simplified into geometric shapes, like some of the Camonica Valley (Anati, 1964) and Californian rock art (Steward, 1929). Some vary very little from one end of the continent to the other - these include most of the animals and birds. Most figures have no decorative infill, or else very simple forms such as stripes and dots. The general nature of non-figurative motifs is analogous to the figurative art, being in all respects simple rather than elaborate.

If a figure is not described in any special terms under the heading Character, this means that it does not vary in any appreciable way from the description given above and on page 76. In order to have character, a figure must stand out in some way. Many do. Human figures constitute the most variable motif. (I would describe any figure which has a torso with arms and legs protruding from either end, a roundish head and no tail (longer than legs), is described as "human" under the heading Motif. Other features may help to establish humanity, such as details of hands, feet, face, genital organs, etc. Some of these features may be absent, if others are present which clearly indicate anthropomorphic associations.) Pronounced elongation of the limbs and torso is the most common variation on the "normal" human motif. The most extreme version is the "stick-man", in which the limbs and body are represented by single lines - one continuous row of pits or one stroke of paint. Some anthropomorphic figures have parts of their bodies exaggerated in size - usually the head or genital organs. Others are shown in impossibly contorted postures. Some complex variations are best described by using a term which is well-known in the literature, and represents a consistent combination of special
Either figurative or non-figurative motifs may be decorated to a greater degree than generally found in Australian rock art - with infills composed of a variety of forms, multiple colours, various appendages, etc. Many paintings in Arnhem Land have this character. A variation of this is the use of more detail than usual, for example the boomerangs, shields and other objects at Port Hedland, which are infilled with intricate linework (McCarthy, 1952).

Another type of character is an association of the figure under discussion with another figure in some immediately recognisable relationship. (I would separate a motif consisting of a man holding a boomerang into two figures, because man and boomerang are separate motifs in their own right.) Each figure in the relationship (or composition) would have an appropriate associative character, and would hence differ from an isolated figure.

The list of suggested characteristics is not exhaustive or absolutely standardised; nevertheless, if, when compiling quantitative data, characters are described consistently, then, in a quantitative analysis, one can count up the number of times that they occur, and use the results in the same way as the other descriptive categories can be used - e.g. 10% of men are carrying objects in their hands; 63% of fish are X-ray; etc.

This concludes the discussion of the list of names. Fig. 3: 6 and Table 3: 1 constitute an example of the application of this system to a number of figures derived from Australian rock art.
These captions refer to the three following pages.

Fig. 3: 6 (after McCarthy, 1968: 134-5)

This figure illustrates a set of motifs found at various rock art sites in Australia. They constitute a range of examples suitable for demonstrating the application of the system of terminology described in this chapter.

Table 3: 1

This table consists of a column diagram in which the motifs illustrated in Fig 3: 6 are registered according to the list of terms set out on pages 85 - 9. The letters and numbers along the top of the columns are the code numbers indicated in the lists. For the sake of illustrating the system, the motifs have been described as being made by various techniques, which cannot be strictly related to the techniques of the original examples "(these being only partly identifiable). In the case of motifs made by an additive process, colours have been indicated. R = red, W = white, Y = yellow, B = black. X = multiples of the form described in the previous columns; for example, Fig. 7 consists of seven circles which can all be described as pecked continuous lines which enclose space and have no interior infill. F = figurative, NF = non-figurative.

This exercise is only an example of one way in which the system of terminology can be used to describe various motifs found in Australian rock art. It also demonstrates the kinds of judgements which I would make about the form of these particular figures. Other workers would undoubtedly produce slightly different results, but I believe that the significance of these would be outweighed by the degree of general consistency.
<table>
<thead>
<tr>
<th>Figure</th>
<th>TECHNIQUE</th>
<th>FORM</th>
<th>MOTIF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF concentric circle</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF spoke concentric circle</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF spiral</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF circle disc</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF circle and intersecting lines</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF U</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF row of circles</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF chain of bisected circles</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF linked quartered circles</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF group of circles</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF oval and intersecting lines</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF concentric U</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF parallel undulating lines</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF parallel straight lines</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>NF parallel curved lines</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>F fish</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>F echidna</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>F turtle</strong></td>
</tr>
</tbody>
</table>
Table 3:1 (cont.) (see page 110)

<table>
<thead>
<tr>
<th>Figure</th>
<th>TECHNIQUE</th>
<th>FORM</th>
<th>X</th>
<th>MOTIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Ai</td>
<td>✓</td>
<td>✓</td>
<td>F human</td>
</tr>
<tr>
<td></td>
<td>Ai</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ai</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>W</td>
</tr>
<tr>
<td>21</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF circle</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF non-intersecting lines</td>
</tr>
<tr>
<td>22</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF rake</td>
</tr>
<tr>
<td>23</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF herringbone</td>
</tr>
<tr>
<td>24</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF ladder</td>
</tr>
<tr>
<td>25</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF star</td>
</tr>
<tr>
<td>26</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF intersecting straight lines</td>
</tr>
<tr>
<td>27</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF rake</td>
</tr>
<tr>
<td>28</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF herringbone</td>
</tr>
<tr>
<td>29</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF parallel straight lines</td>
</tr>
<tr>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF cup and ring</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>F hand imprint</td>
</tr>
<tr>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>F hand stencil</td>
</tr>
<tr>
<td>33</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>F hand</td>
</tr>
<tr>
<td>34</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>F decorated hand stencil</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NF circle and intersecting line</td>
</tr>
</tbody>
</table>
This system of terminology is not intended to be applicable to everything from a smear of charcoal to the Mona Lisa. It is particular to Australian rock art, and it keeps within the limits of this art. Nor does it attempt to register every feature of every figure - in a complete recording system, there could be categories for geographical location, compass orientation, type of rock, weathering, superimpositions, descriptions of the particular traits of individual figures - position of limbs, presence or absence of eyes, ear, fingers, etc. and any other items of desirable information. Complete recording is the business of individual research programmes, and the selection and manipulation of these supplementary factors would differ in each situation. I am not concerned with them.

The factors that are included in this system are those which relate to style. This term is widely used, with a variety of meanings. For this reason, I have largely avoided it until this point. McCarthy uses "style" for those aspects which I have described under the heading Form. Other writers use "style" in the place of my Character, as something over and above the other aspect of technique, form (or treatment, composition, design) and motif (or subject, schema, type, form).

In my opinion, the style of one figure is the sum total of its technique, form, motif, size and character.* The style of a group of figures is the sum total of a small number of traits selected from each of the five descriptive levels which I have set out. Most figures in the style group display all or most of these selected traits. ("Technique" is a descriptive level; "Pecked" is a trait.)

In Australia, this situation usually occurs when a large number of figures in a particular geographical location consistently display a narrow range of traits. I can best demonstrate this by the following examples.

Most rock carvings in the Sydney area are:-

Technique : pecked
Form : outlines

* This version of "style" is not revolutionary. Basically, it conforms to the usage of this term in Schapiro's classic article "Style" in "Anthropology Today"(1953).
Motif : figurative
Size : size range : absolute = 1' - 30' relative = half life size to larger than life
Character : no character

That is, virtually all the carved figures in this area have been made by pecking. A few lines have been abraded as well, but the engraving techniques of scratching, abrading (only), pounding and drilling are not found here. Groups of scattered marks, dotted lines, lines which do not enclose space, bands, dotted outlines, thick outlines and solid figures occur only as very rare exceptions to the general rule of outlines. Any infill consists of lines. 75% of the figures are figurative, and the proportions of different schemata are known (e.g. men = 10%, fish = 25%, etc.) thus adding to the nature of this style. The size range is very wide, because some figurative motifs are shown very much larger than life size, but most figures are shown life size or half scale. Virtually all would fall between one and thirty feet. There are no miniatures. The general appearance of almost all the figures conforms to the standard of normal Australian rock art - that is, crudely naturalistic with no special distinguishing characteristics. Therefore we have an area in which most of the carvings can be described by five criteria selected from the terminology of Australian rock art. This body of art requires a name. It would commonly be called the Sydney Rock Carving (or Engraving) Style.

What to do about the exceptions? The 25% of non-figuratives conform to the other four criteria - they consist of pecked outlines, ranging from one to twelve feet, and they have no special character by comparison with others in Australia. These seem good grounds for the incorporation of these figures into the Sydney Style. The very small number of figures which deviate in other ways do not display any consistent pattern of traits - therefore they do not form a second style in the area.

In the Cobar area (Mount Gundabooka, Wuttagoona, Iona, Mount Grenfell, etc.) (Black, 1943) most of the cave art is:-

Technique : painted
Form : solid figures (no infill)
Motif : figurative
Size : 4" - 12", miniature
Character : no character
These two examples are very simple - five criteria are all that are needed to describe most of the figures.

The style of the ancient rock engravings in South and Central Australia (Edwards, 1971) is slightly more diverse:

<table>
<thead>
<tr>
<th>Technique</th>
<th>pecked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>bands and thick outlines and solid figures</td>
</tr>
<tr>
<td>Motif</td>
<td>restricted range of motifs, mostly non-figurative plus kangaroo and bird tracks, but with the different motifs occurring in very consistent ratios</td>
</tr>
<tr>
<td>Size</td>
<td>6&quot; - 2', relative size not applicable</td>
</tr>
<tr>
<td>Character</td>
<td>no character</td>
</tr>
</tbody>
</table>

Although the number of traits is a little larger, and a quantitative concept has been introduced to illuminate the motif situation, these carvings still constitute a "Style", under my definition of a large number of figures conforming to a small number of selected traits.

This use of "Style", for a group of figures found at numerous sites within a defined area, roughly corresponds to McCarthy's regional "type" (1968: 126), but my usage is indissolubly linked to my system of classification. As McCarthy pointed out, it is unfortunate that "Style" is normally used to denote a regional group of homogenous art sites, when it is also used in other senses, and he therefore substituted "type". It is my opinion that this usage is too common to ignore or replace with another, less familiar term. Confusion could be avoided, however, if lower case were used for the style of a figure (or group of figures) and upper case for Sydney Rock Carving Style, Cobar Cave Painting Style, etc.

To conclude, the purpose of the proposed system of terminology is twofold. The first aim is to regulate the description of the style of individual figures, both when they are described in full, using the whole system, and when abbreviated descriptions are used which derive from the total system (see page 98). The second aim is the identification of Australian rock art Styles, by observing "clusters" of particular characteristics manifested in large groups of figures.
Chapter 4

Rock Art near Laura, Cape York Peninsula

The small settlement of Laura, on the Laura River, northeastern Queensland, is located at the centre of an area of prehistoric rock art which is one of the most spectacular in Australia. This area, which extends from the Normanby River and the coast north of Cooktown to the Palmer River in the south, contains many caves decorated with brilliantly coloured, large-scale paintings, as well as some rock carvings. The sandstone beds which outcrop in this region date from the Lower Cretaceous and the Jurassic, and are heavily dissected by two drainage patterns flowing north and west. Most cave art galleries occur near the top of the escarpments, up to 1500 feet above the rivers, but some are found in wind-hollowed boulders and collapsed slabs on the talus slopes. Trezise's informants reported that they were formerly occupied during the wet season from November to April, when the lowlands are flooded and mosquito-infested. The area is mainly covered in open sclerophyll forest (Trezise, 1969: 7-9; 1971a: 1; 1971b: 7).

The first cave art site to be discovered by Europeans is the group of painted overhangs now known as Split Rock Gallery, which was found in 1960 by workers constructing the Peninsula Developmental Road (Trezise, 1971b: 7). At this point the road runs along the south bank of the Laura River, until it crosses the river at Laura, and heads north-west towards Cape York.

Many more sites have since been located by Percy Trezise, an airline and aerial ambulance pilot who lives in Cairns, and regularly flies throughout the Cape York area. His programme of research, which is financed by the Australian Institute of Aboriginal Studies, includes reconnaissance from the air, interviews with Aboriginal informants and other local inhabitants, field trips by Landrover and on foot, scale recording of the art using string grids, and the painting of final, full-colour charts which reproduce the shapes and colours of the originals as closely as possible. A number of these charts, and Trezise's descriptions of the sites they depict, formed the basis of an Institute publication, Rock Art of South-East Cape
York, (1971b). Trezise has also written a popular book called Quinkan Country (1969) which described his search for the decorated galleries, his contact with old Aboriginal men who knew something about the paintings, the myths which they remembered, and a lot of background material about the area, including stories from the history of contact between Europeans, Chinese gold-miners and the Aborigines.

The first desultory contacts were with the early explorers. In 1770 Captain Cook bequeathed the area its present population of feral pigs, and took possession of the east coast of Australia in the name of the King. Edmund Kennedy passed through in 1848, on his way to be speared by Aborigines at Escape River, near the tip of the peninsula. William Hann brought the first horses into this area in 1872. But the most important event, with tragic consequences for the Aborigines, was the discovery of gold on the Palmer River in 1873 by James Mulligan. Thousands of European and Chinese gold-miners swarmed into the area. Inevitably there were violent clashes with the Aborigines, who inevitably got the worst of it in the long run. They did manage to eat a few Chinese gold-miners and spear a few horses before the survivors of the ensuing punitive expeditions (or massacres) settled down as fringe dwellers to work for the cattle men who succeeded the miners.

Some Aboriginal renegades held out in the sandstone plateaux where the cave paintings are found, raiding the cattle stations' herds and avoiding the pursuing "bully-men" (police). The last of these "wild men" probably died out in 1922, when an epidemic of pneumonic influenza swept through this area, killing many Aborigines. (Trezise, 1969: 16 and 57-63; 1971b: 9).

Trezise has located only a few old men who have a little traditional knowledge relating to the paintings. Only one man, George Pegus, actually belonged to the country near Laura, which was inhabited by the Gugu-Yalanji tribe. His other informants are members of adjacent tribes, and other groups even more remote from the art area. Their knowledge about the paintings is not particularised - Trezise's accounts of their visits to the galleries indicated that their interpretations were speculations based on a general background knowledge of myths, ritual procedures and sorcery. George Pegus died before Trezise could take him to more than a few small sites, and the other men are old, and have difficulty walking up to the galleries (Trezise, 1969).
In Rock Art of South-East Cape York Trezise presented his own classification of the Laura motifs, according to "the motivation behind each painting".

The how and when question can be thoroughly investigated and analysed by workers in the future, but the "why" will be best answered by present day recorders who have ready contact with the near and direct descendants of artists. These descendants, with their intimate knowledge of tribal culture and customs, can provide intelligent comment and clues to assist in the identification of the various paintings and their purpose. Consequently, I have attempted a motivation summary.

For the motivation summary I have listed nine reasons, at least one of which I believe to be the motive force behind a particular painting by a particular artist. ... The list and my interpretation of each motive is as follows:

- Ancestral Culture Hero;
- Totemic ancestor;
- Spirit figures;
- Sorcery;
- Love magic or fertility;
- Hunting magic or increase;
- Mortuary;
- Weapons and implements;
- Stencils. (13-4)

He then explained and illustrated examples of each category. The phrases "intelligent comment and clues", "assist in the identification", "attempted", "I believe to be", "my interpretation", indicate Trezise's view of the status of this method of classification.

Ucko drew particular attention to Trezise's work on the interpretation of rock art by consultation with Aboriginal informants, in an article in the A.I.A.S. Newsletter called "Australian Rock Art in World Context", which was apparently intended to encourage this kind of study in Australia (1967).

Australia is probably the only place where there are still some informants who can give us (prehistorians) information about the questions which need answering. (47)

Documentation of the Australian situation may add to the range of possible explanations offered for 'primitive' rock decoration in the archaeological context ... a prehistorian may search one Australian report after another, even when they are based on native informants, without finding the answers he so desperately requires (notable exceptions are the published reports by Professor N.W.G. Macintosh on Beswick Creek and the current research by Captain P. Trezise in Bull Creek and elsewhere). (48-9)

Ucko's view of Australia as a potential source of traditional Aboriginal explanations for making rock art was optimistic - at least in respect of this area. Trezise's real situation in Cape York was later revealed in Quinkan Country. His most eligible informants, George Pegus and Harry...
Mole, of the Gugu-Yalanji and Gugu-Warra tribes which occupied the area containing the paintings, both died before they could provide much specific information about particular painted sites. Another old man, Willy Long, has visited a number of the galleries, but his traditional tribal area is remote from the Laura area; in 1967, he told me that his country did not contain any caves, let alone cave paintings. That leaves two younger men, Caesar Le Choo, whose life story, told in Quinkan Country, does not indicate much opportunity to acquire traditional knowledge (137), and Trezise's most constant companion Dick Roughsey, who comes from Mornington Island.*

Trezise's classification of motifs according to presumed motivation was therefore a generalised reflection of Aboriginal religious concepts and magical practices in the Cape York area; it was his own "interpretation", based on "clues" provided by variously qualified informants, as he pointed out himself.

The Galleries

During two short trips to the Laura area, in October 1967 and May 1968, I visited five painted galleries, which have been named Giant Horse, Quinkan, Split Rock, Mushroom Rock and Gugu-Yalanji Main Camp by Trezise. I subsequently selected the first three of these sites to use in the quantitative analysis described in the next chapter, and added two others, Crocodile and "Pig and Emu" (which constitute two galleries in Trezise's description, but one site in mine, because these two shelters are only forty yards apart), which I had not visited.

Each site actually consists of several spatially separate overhangs containing painted figures, and for my purposes I have divided the galleries into these units, and have given names to the individual overhangs. Thus Split Rock Gallery (or site) consists of three overhangs (or shelters), called Main, Flying Fox and Spanish, and abbreviated to SR/M, SR/FF and SR/S (see page 148).

In most cases, it is immediately clear that the overhangs which go to make up each site are not homogeneous painted units. The variation between them is sometimes in respect of the motifs which they contain, e.g. one shelter

* See page 141 of Quinkan Country for a description of a visit by Willy Long, Caesar Le Choo and Dick Roughsey to Giant Horse and Quinkan Galleries - it is clear that their comments on the paintings are traditionally-oriented speculation rather than definitive interpretation.
which has almost nothing in it except figures of flying foxes. Others are distinguished by particular predominating colours, e.g. a shelter which is decorated with virtually no other colours but red and white, or by the distribution of figures - heavy superimposition versus isolated figures on a background of bare rock. This obvious heterogeneity disposes of the possibility that any type of painting was randomly placed on the nearest convenient rock surface, with no consideration of location or position. Definite factors must have governed what, and how much was placed in any particular overhang, or they would not all be so different. This variation can be confirmed and measured by mathematical means, which will be set out in Chapter 5.

Giant Horse Gallery (Trezise's numeration = Area II, Site C, (1) -(5).

Giant Horse Gallery is one of the largest sites yet discovered in the Laura area. It consists of five overhangs in three huge blocks of sandstone which form part of the rim of the high plateau above the north bank of the Laura River. The location is about ten miles south-east of Laura itself, two miles north of the Peninsula Developmental Road, and 1000 feet above the river (see Fig. 4:1). The plan of the site shown in Fig. 4:2 indicates the relative position of the five shelters, which I have named, from west to east, Overhangs A, B, C, D and E (coded GH/A, GH/B, CH/C, etc.).

The large overhang at C is a good camping area. It faces south, with a view over the river towards the opposite escarpment. The floor consists of a flat rock platform, lightly covered in places by a few inches of loose sand and dirt. It is littered with several hundreds of stone flakes. About a dozen burren adze slugs, one with gum adhering, and several scrapers and cores were observed. In front of Overhang C is a steep cliff line, up to thirty feet deep, and at the base of this cliff there is a vein of iron oxide material containing ochres of many different shades of red and yellow. This ochre is hard, but it can be ground easily, giving very bright colours.

The most densely painted area is in Overhang C, where recent figures in bright colours stand out against a blurred background of the jumbled remains of older, faded paintings, so that a continuous band of stained sandstone, eight to nine feet high, stretches across the whole shelter,
Plateau covered with open sclerophyll forest

sandstone blocks forming rim of plateau

edge of escarpment

steep cliff line

ochre deposit

Fig. 4:2. Sketch plan of overhangs forming Giant Horse Gallery. Not to scale.
contrasting with the pure white rock above it out of arm's reach. Along the top margin of this painted zone, the heads and limbs of the highest figures protrude as if waving above a crowd. Any graphic recording or photograph can really only register the most outstanding figures; the rest of the surface is nothing but a mass of multi-coloured patches. Referring to his published chart of this shelter, Trezise wrote that "only the recognisable figures have been recorded" (1971b: 58), and he described and illustrated 140 individual figures in Overhang C. When I visited the site in 1968, I did not attempt to make another graphic record, but I made my own list of all the figures which I could discern, noting their technique, form, colour, decorative infill, motif, size and special characteristics according to the system and methods described in Chapter 3. By this more limited method of recording, I scored 212 individual identifiable figures in this particular overhang, that is, 72 more than Trezise. These extra 72 figures are mostly so difficult to distinguish, that if Trezise had attempted to record them all graphically, he would still be thus occupied. They are, however, quite definite and recognisable motifs, which can be perceived and visualised; anyone who has examined cave paintings will appreciate the tantalising process by which a faint figure has to be picked out from its confused surroundings.

First there is a mountain
Then there is no mountain
Then there is. (Donovan)

The most striking feature in this overhang (C) is a very large figure of a horse, 18'9" long, in bright yellow with a white outline. The head, body and limbs are marked with white bars and single medial stripes. The animal's body is very thick and rounded, quite unlike a horse, but the shape and position of the head, ears, neck, legs, hooves and penis are distinctively equine, and could not be thought to resemble any native mammal. Associated with this figure is the painting of a woman, horizontally oriented, who appears to be "trampled" by the front hooves of the giant horse. The two figures were painted at the same time (determined by mutual superimposition of paint in the overlapping area), and the colours are very similar in shade and brightness (enough to suggest that they were ground and mixed at the same time, even if not
quite from the same lump of ochre).* A composition seems evident, but whether the horse is really meant to be trampling the woman, or whether some other relationship was intended, is of course unknown. All the following descriptions of motifs and "compositions" are admittedly observer-based and subjective. They are intended to convey an image of the sites rather than present an interpretation of Aboriginal meaning.

An apparent grouping of figures in Overhang B does strongly suggest a violent episode. Another horse, again in yellow with a white outline, seems to be throwing its rider over its head. This man is in red with a white outline; he holds the horse's reins in his hand as he flies horizontally through the air in front of the horse. An elongated object in the same colours beside his other hand suggested a rifle to Trezise, and the shape of his feet, boots (1969: 126-7). It is therefore likely that a European has been depicted, presumably wearing trousers (in fact, the outline of the legs does suggest this garment), but a penis is clearly shown. Possibly the need to indicate gender by a conventional symbol overcame the visual image of some stockman's trouser-clad legs. A third yellow horse is located in Overhang A, as well as the faded red figure of a pig. Trezise stated that a stencil in Overhang C

... is almost certainly that of a horse's hoof. Some of the miners in the Palmer goldrush recorded that their horses were speared as much for the iron horseshoes as for the flesh, for, when closely pursued, the Aborigines hacked off the hooves and fled with them.

(1971: 68)

Obviously this site was still being decorated at some time after Hann's horseback expedition in 1872. Indeed, the paint on some of the figures is so thick and fresh that it can be brushed off with a finger.

Neither Overhang A or B have been so densely covered in paintings as C, but the motifs, and the range of forms are similar. D also contains a smaller number of motifs, including two figures of macropods in black pigment, which is otherwise absent from this site. All the shelters display a variety of human, animal and other figurative motifs in outlines, solid colours, outlines with a solid infill in a different

* Trezise disagrees with me on this point, assigning the two figures to different phases in his sequence of superimpositions.
colour, and outlines with solid infill and other interior patterning as well as many examples of the ubiquitous hand stencil.

Overhang E is nothing more than a shallow niche hollowed out of the side of the most easterly of the sandstone blocks forming the site. It contains only a few figures, strongly suggestive of a composition. The first two on the left of the panel are a man and a woman, shown in intercourse, the woman drawn frontally and in a horizontal position, and the man upright in a semi-profile view in which his penis is shown sticking out from the side of his body. To the right of him are two other men in identical poses, with the penis shown erect in the same way. This group apparently depicts a real or mythical occasion when several men had, or were to have, intercourse with one woman. These four figures are delicately picked out in a fine dark red line, now faded, and there are traces of a yellow infilling. But over the first man and woman, there has been superimposed a very crudely shaped man, in thick, bright orange paint. The shape of this figure is quite different, in body proportions and head shape, to the earlier ones, and it is not outlined in another colour, as they are, but the pose is the same, with the penis shown erect, and pointing at the woman. It is possible that the artist intended to achieve some particular relationship with the older composition by painting in his addition in this fashion. One amazing item at Giant Horse Gallery is a painting, in faded yellow, of a man in a horizontal position, about 6 feet long, which is located some 30 feet up on the rock face above Overhang C. This position is now completely inaccessible, from above or below.

On the east side of the main group of paintings in Overhang C there is one engraving, on the vertical rock surface. It consists of the thick, pecked outline of a spoked circle, linked to two other enclosed, irregular shapes. This motif does not resemble that of any of the paintings at the site.

Quinkan Gallery (Trezise = Area II, Site B, (1) -(6).)

"Quinkan" is the delightful name used by the inhabitants of the Cape York area to refer to any Aboriginal supernatural spirit. It is equivalent to the more common "debbil-debbil", and is used by Aborigines and Europeans, as in "Keep quiet, or the quinkans will get you!" Its linguistic origin and original meaning are both uncertain. Because some "quinkans" are said to be extremely thin, and to inhabit crevices in rocks (like
"mimi" in Arnhem Land), paintings of very elongated human figures, some of them very large and dramatically impressive, are called "quinkans" by Trezise.

Quinkan Gallery consists of six small overhangs which are located around the bases of large floaters close to the head of a small, unnamed creek which cuts through the main plateau above the Laura River. This creek, which runs from east to west, is about half a mile to the north of Giant Horse Gallery. Five of the overhangs, named "Culture Heroes, Jabiru, Quinkan, Flying Fox, and Crocodile" (coded Q/CH, Q/J, Q/Q, etc.) are on the south side of this creek, and one, "Petroglyph", is on the north side (see Fig. 4: 3).

The six overhangs are all quite different in character. The one called "Quinkan" has a particularly eerie atmosphere, which cannot fail to impress any visitor. Access to it is by a long narrow split between two huge sandstone floaters, which arch above the rocky, sixty foot long pathway. At the end of this chasm, a small shelter opens up on the left-hand side of the passageway, and is filled with a weak, greenish light which filters down through a tree growing in the crevice. Several large, attenuated human figures (or quinkans), painted in dark red on the otherwise blank rock surface, are placed directly in front of the observer. Because of the angle of the cave wall, the extended, spidery arms of the largest male figure arch above one's head. It is eleven feet long. It seems very probable that the style and arrangement of these figures were deliberately combined with the natural form and setting of the overhang in order to produce the maximum dramatic effect.

The other shelters at the site have a great variety of figures, and varying degrees of superimpositioning. Culture Heroes is a fairly gloomy little overhang, containing a number of similar male figures with large rayed "headdresses", and an unusually high proportion of hand stencils, some of which are so small that they must indicate the presence of quite young children. The dominant colour in this shelter is a very dark red, with a dull yellow which was used for outlines and infilled patterns. On one side of the overhang, near the floor, is the entrance to a narrow tunnel, barely large enough to crawl through. The other end of this tunnel comes out just below the large figures in the Quinkan shelter. This natural passage could conceivably have been used for some dramatic effect.
Fig. 4:3. Sketch plan of overhangs forming Quinkan Gallery. Not to scale.
Jabiru Overhang, on the other hand, is a brightly lit area, where the predominant colours are bright red and white, both colours being used for outlines and infills. There is a great variety of subjects in this small area, and many of the figures are well formed and very attractive. A large jabiru with a white body and a red head, which dominates the centre of the main panel, has unfortunately been damaged by rock wallabies, who have worn a track across the surface of these paintings. Just below this figure are two engravings, which consist of small circles, about six to eight inches in diameter, formed by a broad pecked band. Other unusual motifs in this overhang are a freshwater yabby and some sort of palm tree, shown in a horizontal position, with three leaf fronds (one partly rubbed off by the wallabies) and a bunch of fruit or flowers hanging parallel to the trunk. Two long snakes extend the full length of this group of paintings.

Flying Fox consists of a small niche containing thirteen painted flying foxes in yellow and white, hanging neatly in a row and superimposed on a dark red man. Nearby is a figure which Trezise identified as a "mortuary bundle" - bones wrapped in paperbark (1971b: 46).

In Crocodile, extensive superimpositioning has taken place, and this overhang appears to have been used more intensively than any other part of the site. Large figures in various shades of yellow contrast with the sparse use of this colour in the other overhangs at this site. A large, brilliant yellow crocodile with an outline and decorative infill of dots and lines in dark red dominates the shelter, but there is also a considerable variety of other motifs and colours. Its most important feature, however, is not at all conspicuous. On the wall of the overhang, completely covered up by subsequent layers of paintings is a frieze of pecked engravings. The individual pits are quite distinct. They form several series of interconnected straight and curvilinear bands and solid areas, making up "tectiforms" or "line mazes", and a number of emu or bird tracks. Thus, engraved non-figurative motifs plus tracks precede, in this instance, figurative paintings.

There are more engravings in the same technique at Petroglyph Overhang, on the opposite bank of the creek, including single solid circles of various sizes, and two small solid circles connected by a curved band. There is also a pecked outline figure of a woman which is the only engraving in all these sites that resembles figures found in the paintings,
even including the shape of the head. At some distance from the other engravings (and not recorded by Trezise) are several bird tracks, which appear to be those of the scrub turkey, which is found in this area. The paintings at this overhang are all badly faded, probably because the shelter is much higher and more exposed than any of the others. They include a variety of subjects, in a mixture of rather dull colours. One intriguing figure is a line of little red footprints walking up the wall towards the rest of the paintings, which are located above a narrow rock ledge, ten feet above floor level.

Split Rock Gallery (Trezise = Area III, Site A, (1) and (2).)

The first cave painting site in the Cape York area was discovered in 1960 by roadworkers who were working on the Peninsula Developmental Road, at a point ten miles southeast of Laura (Trezise, 1971b: 7). This site, which consists of three rock shelters under several enormous floaters which form part of the talus slope on the south bank of the Laura River, is now called Split Rock.

The site has become well known, partly because of its proximity to the road, but also because photographs of some rather striking human figures from it have been widely published, accompanied by speculation that they represent very early non-Aboriginal visitors to Cape York, such as 14th century Spaniards or ancient Egyptians (Terry, 1965). This theory is based on the visual effect of cross-hatched decoration on the figures, which has been thought to resemble woven material or even chain mail. This impression is accentuated by a large oval projection on the head of clearest example of these tall human figures, and his long pendant "ears", which, taken together, do look like a helmet. The whole effect is rather like the figures of the Norman knights in chain mail shown in the Bayeaux Tapestry.

These interpretations are symptomatic of a phenomenon with which the scientific discipline of Archaeology has had to live since its inception, namely, the popular acceptance of alternative, more "glamorous" explanations for prehistoric events than those offered by archaeologists. The current popularity of theories which attribute the major achievements of ancient cultures to extra-terrestrial visitors is only the most recent example of what can be called "Anti-Archaeology" (Van Daniken, 1971). The evidence advanced in support of these theories usually includes a misplaced
Fig. 4.4. Sketch plan of overhangs forming Split Rock Gallery. Not to scale.
faith in selected visual cues in prehistoric art. Delusion often results from the interpretation of decorative details as "realistic" features of the subject, or when some part of a figure which is simplified or stylised corresponds to a schema which is familiar in a Western style of illustration. One instance is Von Daniken's repeated interpretation of unfamiliar stylistic details in various examples of ancient and mediaeval art as items of space flight paraphernalia. The ensuing description of the figures under consideration is often superficially convincing, particularly as these items are usually taken completely out of context. To return to the "Spaniards" of Split Rock, although the particular combination of visual elements which excites the imagination - tall, elongated body, dense criss-cross patterning, oval headdress and long ears - has not appeared in any other figures yet discovered in the area, these traits are all found separately in many other paintings which do not look anything but Aboriginal in origin. Some other human figures have two or three of the same traits, without appearing particularly exotic to the Laura art style. "Animal" motifs often have cross-hatched patterns as infill.

This overhang (the "Spanish" shelter) (coded SR/S) is located at the top of the site, furthest up the talus slope from the road and the river. It is not visible from the other overhangs which make up the site. The vertical wall with the large paintings is very exposed, and they are badly faded. Despite this fact, there are several features of this group of paintings which correspond to Quinkan Overhang at Quinkan Gallery. Both are spatially separate from other areas at the same site, and contain a few large human figures which are isolated on an extensive rock surface, with almost no overpainting or other figures. Both groups contain male and female figures which are very elongated and have long ears drooping from the side of the head. The impression of stylistic similarity between these two shelters is better realised in Trezise's painted records of the two groups than in photographs, because of the widely different states of preservation (see Figs. 4: 5 and 6).

As one of the small overhangs at Quinkan Gallery contains thirteen painted flying foxes with only one other figure, it is interesting to find that in the middle shelter at Split Rock, paintings of flying foxes also predominate - eighteen flying foxes to eighteen other assorted motifs. Just as all the flying foxes at Quinkan Gallery resemble each other very strongly, being practically identical in colour and shape, so do these
Fig. 4:5. Trezise's recording of Quinkan Overhang, Quinkan Gallery, Laura (1971b).
Fig. 4:6  Trezise's recording of Spanish Overhang, Split Rock Gallery, Laura (1971b).
figures at Split Rock. Unlike the flying foxes at Quinkan, which are rather naturalistic and carefully outlined and decorated, those at Split Rock are all rather crudely drawn — basically just solid ovals with heads and limbs sticking out at the appropriate angles to identify them as flying foxes — and all of them except two are in solid red with no outline or infill. The common stylistic characteristics shared by the figures at each site suggest that, in each case, the group of flying foxes was painted in a single episode — probably by or under the control of one artist, using the same batch of pigment.

The fact that each of these sites, or groups of shelters, has one shelter containing large human figures in a particular style, and one overhang containing a large group of flying foxes, suggests that, at some stage, the distribution of motifs at a site was organised in this way by the artists/owners, and that the similarly endowed overhangs at each site are somehow equivalent to each other in a formula which determines the composition of a site. In fact, each site has another type of overhang in common — one that, in contrast to those containing specialised groups of motifs, is densely overpainted with many layers of figures, with a wide variety of motifs and colour combinations. At Quinkan, these conditions pertain in Crocodile and Petroglyph Overhangs. Their equivalent at Split Rock is Main Overhang.

Main Overhang (SR/M) has a very large area of smooth rock surface, which is covered with a mass of overlapping figures, including many which are very faded. All these paintings are dulled by a fine yellow dust that probably rises from the road, which is immediately below the site and visible from it. The road also brings in vandals, who have scratched their names, outlined indistinct figures with chalk and greasy crayon, and littered the floor with used flashbulbs.

The colours of the paintings in Main Overhang are less bright than those at other sites. Many figures are faded and merge into each other rather than standing out, but some attract attention because of other characteristics. There is a weirdly distorted human figure, whose knobbly arms and legs are bent up at impossible angles, above his long and knobbly penis. He appears three times in this shelter, and was possibly some anthropomorphic spirit whose physical characteristics were dictated to the artist(s) by mythical requirements. Several pairs of
Fig. 4:7. Overhang C, Giant Horse Gallery, Laura. The Aborigines who used this large rock shelter left many stone artifacts on its floor, and more than 200 painted figures on its wall.

Photo: L. Maynard.
Fig. 4: 8. Overhang C, Giant Horse Gallery, Laura.
A giant horse (18'9") seems to be trampling a woman (5'8").
Photo: L. Maynard

Fig. 4: 9. Overhang B, Giant Horse Gallery, Laura.
Apparent composition of horse throwing rider.
Photo: L. Maynard
Fig. 4:10. Overhang C, Giant Horse Gallery, Laura.
Many layers of figures have been painted on this wall.
Photo: L. Maynard

Fig. 4:11. Overhang C, Giant Horse Gallery, Laura.
The painted zone contrasts with the white sandstone wall of the shelter.
Photo: L. Maynard
Fig. 4:12. Culture Heroes Overhang, Quinkan Gallery, Laura.
Simple figurative motifs in solid colour with contrasting outline.
Photo: L. Maynard

Fig. 4:13. Jabiru Overhang, Quinkan Gallery, Laura.
Human figures, birds, snakes and fish.
Photo: L. Maynard.
Fig. 4:14. Quinkan Overhang, Quinkan Gallery, Laura. The tallest figure is 10'5" high.

Photo: L. Maynard

Fig. 4:15. Spanish Overhang, Split Rock Gallery, Laura. This figure is 8'10" high.

Photo: L. Maynard
Fig. 4:16. Flying Fox Overhang, Quinkan Gallery, Laura.
Photo: L. Maynard

Fig. 4:17. Flying Fox Overhang, Split Rock Gallery, Laura.
Photo: L. Maynard
A VANISHING FRONTIER (G)

JOIN DIETRICH AND PATRICIA STREHLE on their
CAPE YORK ADVENTURE
4-wheel drive journey into the land of GOLD FEVER, DEADLY
SNAKES and CROCODILES . . . Don't miss this spectacular 2-hour
colour film which thrilled overseas audiences last year.

Commencing Friday, M
OPEN HOUSE MUSIC ROOM.
TWO SESSIONS AT 7 P.M. &
THEN SATURDAY 8TH, FRIDAY 14TH AND SAT
MARCH.
TICKETS AT DOOR.
ADULTS $2.40, CHILDREN AND PENSIONERS

AUSTRALIAN
MATCHES

PREHISTORY SEM
SECOND TERM

It looks as though the threatened
Zealand Archaeology may be eclipsed
by an unexpected school of Australo-Hispanic
that the great distance and resemblance
and the bleaker parts of the Cantabrian
(Cabrera?) may add a suitable
perspective to our inter-state speakers and hope the
arise from our forum.

We anticipate that by July 18th that
the A.D. Hope building will be furnished and that, if
regulations permitting, we will be allowed to hold our
meetings under tolerable conditions for communication, rather than the catacomb-like accommodation and boiler room atmosphere of the Nadel Room - granted that this latter has housed many brilliant intellectual moments during the growth of Australian
archaeology.

During the Winter Term the spectre of sickness stalks
the cloisters, and our speakers may be struck down with no notice. We will do all

Photo: L. Maynard

Fig. 4.18 Main Overhang, Split Rock Gallery, Laura
Trezise's informants identified this figure as a spirit being who travelled long distances
by bouncing on his penis.
painted kangaroo tracks and some large human footprints show that these motifs did receive some attention in Laura cave art, although not as much as in other Australian art styles, where tracks sometimes dominate rock art sites. There is one apparent composition, showing a woman giving birth to a baby which is still attached by the umbilical cord (these figures could also represent intercourse, but there is a very marked difference in size, suggesting the former interpretation). A few pecked engravings, including one which consists of a number of interconnected and radiating bands, and two pecked bird tracks are located in the centre of the painted area.

Other Galleries

I did not visit the other two sites which I have used for the quantitative analysis in the next chapter, namely, Pig and Emu Gallery and Crocodile Gallery (Trezise, 1971b: 15-33). I have, therefore, no general comments to add to what has been written about them by Trezise in his two books. The presence of engraved bird tracks and non-figurative motifs (in this case, circular figures) under figurative paintings, in Emu Overhang, which conforms to the sequence of these styles observed at Crocodile Overhang, Quinkan Gallery, is particularly interesting (Trezise, 1971b: 21-25).

Nor is there any need to describe here the other two sites which I visited, Mushroom Rock and Gugu-Yalanji Main Camp, because neither of these sites contained enough figures to warrant including them in the analysis.

In Chapter 3, I defined the style of a single figure as the sum total of its technique, form, motif, size and character, and the style of a group of figures in the same terms. A particular style (meaning a descriptive name which can reasonably be applied to sum up the overall visual impact of a large number of figures) occurs when most of the figures in a larger group of paintings or engravings display all or most of a small number of traits drawn from each of the categories listed above. Does the cave art of the Laura area manifest a style (or styles)?
A very large proportion of it is:

- **Technique:** painted
- **Form:** outlines, solid figures and outlines with solid infill and some interior patterning
- **Motif:** figurative; usual range of Australian motifs
- **Size:** 1' - 6'; ½ life size to life size
- **Character:** no character

(see Chapter 3 for definitions of these terms).

I therefore conclude that the figures which conform to all or most of these traits constitute a style, which may be called the Laura Cave Painting Style.

On the other hand, at the same sites, there are two groups of figures, which do not conform to the set of traits set out above, but which have a different set of common characteristics which is readily identifiable. One of them is:

- **Technique:** stencil
- **Form:** band of colour, enclosing space, with no interior infill
- **Motif:** human hand + a few other items
- **Size:** not applicable
- **Character:** not applicable

Stencils cannot be said to conform to any style except their own, which is found in every cave art area of Australia. The Laura Cave Painting Style, on the other hand, is particular to the Laura area (although similar styles occur elsewhere). Stencils are, in a sense, astylistic, because most of their nature is controlled by the basic technique, and not by any determining cultural factors.

The other block of figures is:

- **Technique:** pecked
- **Form:** bands, thick outlines and solid figures
- **Motif:** restricted range of non-figurative motifs + bird tracks
- **Size:** 6" - 2', relative size not applicable
- **Character:** no character

In my opinion, these figures comprise a different style of rock art to
the Laura Cave Painting Style, but I will not bestow any special name on them until a further discussion of their possible associations, which may be found in Chapter Six.

There are also some exceptional figures which do not completely conform to any of these three styles but which do not display any consistent pattern of traits of their own. The "Knobbly Man" in Main Overhang, Split Rock Gallery, is one example of a figure which, unlike most Laura motifs, has a particular "character"—contorted limbs, enlarged joints, detailed infill and elongated penis. Exceptional motifs are normal in any Australian rock art area; they do not, in my opinion, interfere with the integrity of the identified styles. I have never heard of an excavation which did not produce several stone artifacts which could not be fitted into any of the usual typological categories. In this case, virtually all the exceptions tend to assimilate to the Laura Cave Painting Style, the "gap" being bridged by shared details—colour, decorative patterns, certain head shapes in the case of some non-conformist human figures, etc. In any case, they are all located on the same rock surfaces.

The three styles identified thus far seem readily perceptible, and not to stand in need of statistical proof. Theoretically they could be challenged by quantitative methods, and further styles could be picked out—either amongst the exceptions, or as sub-styles within the main ones.

All numerical data about the sites, and the analysis thereof, has been reserved to the next chapter. To conclude this general description of the Laura cave art, it may be observed that the paintings are very typical, almost archetypal, of simple Australian figurative art. Technique and form aside, hundreds of the motifs display silhouettes which are indistinguishable from those of figurative paintings and engravings all over the continent. The large scale and fresh, vivid colours tend to distract the observer from the fact that most of these paintings have almost no other distinguishing characteristics. If they could be floated off their cave wall at Laura, and either shrunk, faded or changed into drawings or even engravings, they could be slipped onto the appropriate rock surface at Groote Eylandt, Depuch Island, Cobar, the Clarence Valley or Sydney-Hawkesbury, without affronting the local rock art at all.
While visiting Giant Horse Gallery, Quinkan Gallery and Split Rock Gallery, I compiled my own list of all the painted figures which I observed at these sites. At the library of the Australian Institute of Aboriginal Studies, I examined Percy Trezise's painted charts of Pig Gallery, Emu Gallery, and Crocodile Gallery, and extracted from them a similar list of figures, noting in each case the forms, colours, decorative patterns and any unusual characteristics. These lists comprise the data which I then subjected to various statistical procedures, which will be described in this chapter.

Thus, the two methods of collecting this data - direct observation in the caves, and indirect observation in the Institute library - might tend to split it into two categories, with Giant Horse, Quinkan and Split Rock in one basket, and Pig, Emu and Crocodile in the other. Can it be argued that either of these sets of records represents a complete view of what is now on the walls of the caves at Laura, or that one set is more complete than the other?

Of course, neither of them is complete. There are many figures which are too faded to be picked out, either by Trezise or myself, not to speak of those which must have once been visible, but now completely gone from the wall surface, or covered by subsequent painted layers. Trezise stated quite candidly that he did not bother to put down on paper those figures which were too faded to be easily dealt with (1971b: 15, 21, 58, etc.). His graphic record is therefore (admittedly) less than complete. My record of personal observation is in the form of notations - an analysis of the painted figures at the same sites in terms of the stylistic categories described in Chapter 3 of this thesis. As this procedure is less demanding than the making of a graphic record, it is easier to encompass a larger number of figures.

For example, a Giant Horse, Overhang C, I observed 2121 individual figures, compared with the 133 figures which appear on Trezise's chart of this shelter (1971b: Plate 14) (he lists a further seven uncharted figures in his published description of the site (58-61). Quinkan Gallery, however,
demonstrates that this result is not invariable. For Culture Heroes Overhang, I listed 59 figures. Trezise's list in *Rock Art of Southeast Cape York*, comprises 74 figures (37-9). At Jabiru Overhang, I noted 64 figures; he recorded 65 (41-2); overall at this site, his published record includes seven more figures than my own list which provided the numerical data which is analysed in this chapter.

These variations indicate that there is no reason to regard either my observations or Trezise's graphic records as being more complete than the other. They are both samples of the painted figures actually resident on the walls of the Laura caves. I have not, therefore, differentiated between the data which I accumulated myself, and that which I gleaned from Trezise's charts. None of the tests applied to this data have indicated a difference between those sites which I observed myself and the ones I analysed from Trezise's recordings.

The pecked engravings have been excluded from this analysis. For reasons which I shall set out in Chapter 6, I believe that the engravings represent a completely different episode in the art history of these caves. Where superimposition occurs, engravings are invariably under paintings. There are many layers of paintings, and consistent differences among them (e.g. some are outlined and/or decorated; some are plain solid blocks of colour), nevertheless, I feel that together they constitute one basic style and that they represent one phase of the sites' artistic usage. I have, however, included stencils in this analysis. Their inclusion is not based on stylistic grounds, because the technique for making a stencil ensures that its style is different to that of a delineated figure. But stencils are found in association with paintings and drawings in most other bodies of Australian cave art. In the Laura sites stencils are found superimposed over and under paintings, so they do not represent an exclusive phase.

**Basic data**

Table 5:1 contains the basic data about the number of figures at the galleries which I have used. To make the sample fairly large, I arbitrarily selected only sites which have more than 100 figures in them. Trezise describes Pig Gallery and Emu Gallery as separate sites, but they are in fact only 40 yards apart (1971b: 21), i.e. considerably less than the distance between overhangs at Quinkan and Split Rock. I have therefore
considered them as one site, called "Pig and Emu", containing two overhangs, called "Pig" and "Emu". The code symbols are considerable abbreviation, and will be used in the tables and text in the rest of this chapter. Giant Horse Gallery, Overhang A, becomes GH/A; Split Rock Gallery, Spanish Overhang becomes SR/S, and so on.

Table 5: 1

<table>
<thead>
<tr>
<th>Site</th>
<th>Overhang</th>
<th>Code</th>
<th>No. of figures</th>
<th>Total at Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giant Horse</td>
<td>A</td>
<td>GH/A</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>GH/B</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>GH/C</td>
<td>212</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>GH/D</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>GH/E</td>
<td>8</td>
<td>343</td>
</tr>
<tr>
<td>Quinkan Culture</td>
<td>Culture Heroes</td>
<td>Q/CH</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jabiru</td>
<td>Q/J</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quinkan</td>
<td>Q/Q</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flying Fox</td>
<td>Q/FF</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crocodile</td>
<td>Q/C</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Petroglyph</td>
<td>Q/P</td>
<td>36</td>
<td>245</td>
</tr>
<tr>
<td>Pig and Emu</td>
<td>Pig</td>
<td>PE/P</td>
<td>132</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emu</td>
<td>PE/E</td>
<td>65</td>
<td>197</td>
</tr>
<tr>
<td>Split Rock</td>
<td>Main</td>
<td>SR/M</td>
<td>114</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flying Fox</td>
<td>SR/FF</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spanish</td>
<td>SR/S</td>
<td>13</td>
<td>163</td>
</tr>
<tr>
<td>Crocodile</td>
<td>No.1</td>
<td>C/1</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No.2</td>
<td>C/2</td>
<td>28</td>
<td>122</td>
</tr>
<tr>
<td></td>
<td>Total No. of figures ......</td>
<td>1,070</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is a good point at which to recall that this art is prehistoric. Any classification in which the researcher indulges is the result of his or her own perception of the art. Nevertheless, in order to analyse, it is desirable to categorise the population of painted figures into groups. The proportion of figures at each overhang or site which falls into each of these groups can be used to compare that overhang or site with others.

One obvious way of categorising the various paintings at each overhang is by motif. The motif categories which I used at all the sites are: man,
woman, human, kangaroo, flying fox, echidna, dingo, emu, scrub turkey, bird, snake, turtle, crocodile, fish, eel, stingray, yam, plant, boomerang, basket, bird track, roo track, footprint, hand stencil, other stencil, elongate, oval, other circular and miscellaneous non-figurative. A few extra were added as required at particular overhangs, e.g. lizard, shrimp, horse, etc.

A sample motif listing for one overhang, including percentages to show what proportion of the total in this overhang each motif constitutes, is given in Table 5: 2.

Table 5: 2

<table>
<thead>
<tr>
<th>Overhang GH/C</th>
<th>Motif</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>man</td>
<td>18</td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>woman</td>
<td>12</td>
<td>5.7</td>
</tr>
<tr>
<td></td>
<td>human</td>
<td>34</td>
<td>16.0</td>
</tr>
<tr>
<td></td>
<td>kangaroo</td>
<td>14</td>
<td>6.6</td>
</tr>
<tr>
<td></td>
<td>flying fox</td>
<td>10</td>
<td>4.7</td>
</tr>
<tr>
<td></td>
<td>echidna</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td>dingo</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>emu</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>scrub turkey</td>
<td>9</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>bird</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>snake</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>turtle</td>
<td>20</td>
<td>9.4</td>
</tr>
<tr>
<td></td>
<td>crocodile</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>fish</td>
<td>20</td>
<td>9.4</td>
</tr>
<tr>
<td></td>
<td>eel</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>stingray</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>yam</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td></td>
<td>plant</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>boomerang</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>basket</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>bird track</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>'roo track</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>footprint</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>hand stencil</td>
<td>19</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td>other stencil</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>elongate</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>oval</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>other circular</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>miscellaneous non-figurative</td>
<td>9</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>clutch of eggs</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>lizard</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>saw-fish</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>horse</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>212</td>
<td>99.9</td>
</tr>
</tbody>
</table>

* not represented at this overhang
Each overhang was then tabulated according to the forms* of the figures, combined with their colours. The three colours used in this classification are red, yellow and white (out of the 1070 figures, there are only four which include black pigment). This represents a simplification of the actual situation. There is considerable variety among the shades found in the paintings. In my field notes, I noted bright yellow, yellow, dull yellow (or khaki), orange, and dull orange, as well as faded versions of all these shades, which have been amalgamated into simple "yellow" in these tables. To use all of the various shades in a classification would have meant that the population would be broken down into a multitude of tiny groups - not very useful for further manipulation. Although the simplification was implemented for convenience, there is some indication that it does correspond with the artists' view of the various colours. Many figures consist of two colours, namely solid areas which are outlined, and sometimes infilled with decorative patterns, in a different colour. But the various shades of yellow listed above are never found combined in the same figure - e.g. dull yellow with an orange outline. Similarly, there are no combinations of red shades; these figures always include two of the primary colours - red, yellow or white - in some shade. It seems likely, therefore, that the artists also distinguished these three main colours.

The following coding is used. The position in front of the slash represents an outline, and after it, a solid area of colour.

- R/- : red outline, no infill
- W/- : white outline, no infill
- Y/- : yellow outline, no infill
- -/R : no outline, solid red
- -/W : no outline, solid white
- -/Y : no outline, solid yellow
- R/W : red outline, solid white infill
- R/Y : red outline, solid yellow infill
- W/R : white outline, solid red infill
- W/Y : white outline, solid yellow infill
- Y/R : yellow outline, solid red infill
- RS : red stencil
- YS : yellow stencil
- WS : white stencil

* Refer to Chapter 3 for definition of this term.
It should be noted that, where a figure includes extra decorative infill - stripes, bars, dots, etc., these are always in the same colour as the outline.

Table 5: 3 is a sample showing the proportion of figures in each of the form/colour combinations at one overhang.

Table 5: 3

<table>
<thead>
<tr>
<th>Overhang Q/C</th>
<th>Form and Colour</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R/-</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>W/-</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>Y/-</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>-/R</td>
<td>17</td>
<td>30.9</td>
</tr>
<tr>
<td></td>
<td>-/W</td>
<td>3</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>-/Y</td>
<td>4</td>
<td>7.3</td>
</tr>
<tr>
<td></td>
<td>R/W</td>
<td>8</td>
<td>14.6</td>
</tr>
<tr>
<td></td>
<td>R/Y</td>
<td>3</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>W/R</td>
<td>7</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>W/Y</td>
<td>5</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>Y/R</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>RS</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>WS</td>
<td>6</td>
<td>10.9</td>
</tr>
<tr>
<td></td>
<td>YS</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>TOTAL</td>
<td>55</td>
<td>100.1</td>
<td></td>
</tr>
</tbody>
</table>

* not represented at this overhang

Motif and form/colour combinations are not the only types of categories into which a body of art can be divided, but they seem to be the most useful in this case. I have already explained that I wish to exclude the engravings from this analysis, but a categorisation based on technique might be used in another context. Size and character are not appropriate because the Laura paintings vary little in these respects - unlike other art areas where such divisions would be essential - e.g. Arnhem Land art would require a character-based categorisation to separate mimi figures from the X-ray art.

Comparison of Overhangs and Sites

Comparison between overhangs and between galleries is the next stage. A simple table (5: 4, on following page) showing percentages of selected
<table>
<thead>
<tr>
<th>Motifs</th>
<th>Percentages at individual overhangs</th>
<th>Percentages at sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>man</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>woman</td>
<td>*</td>
<td>6</td>
</tr>
<tr>
<td>human</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>kangaroo</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>flying fox</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>emu</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>scrub turkey</td>
<td>5</td>
<td>*</td>
</tr>
<tr>
<td>bird</td>
<td>*</td>
<td>8</td>
</tr>
<tr>
<td>snake</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>turtle</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>fish</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>eel</td>
<td>*</td>
<td>8</td>
</tr>
<tr>
<td>yam</td>
<td>2</td>
<td>*</td>
</tr>
<tr>
<td>boomerang</td>
<td>2</td>
<td>*</td>
</tr>
<tr>
<td>bird track</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>footprint</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>hand stencil</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>elongate</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>oval</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Number of figures</td>
<td>42</td>
<td>50</td>
</tr>
</tbody>
</table>

Table 5: Comparison of percentages of motifs between individual overhangs at the same site and between sites. Percentages have been rounded off to whole numbers to facilitate comparison.
* not represented at this site.
motifs (excluding those which represent only a tiny number of figures e.g. echidna) serves to strengthen the suggestion which I made in Chapter 4 - that there is considerable variation between the contents of individual overhangs, even at the same time.

This point is quite important for determining whether the sites were organised according to some cultural formula. If there were no rules at all about what motifs could or should be painted at a particular location, then there should be a roughly equal distribution of motifs or colours at each overhang. It is noticeable that the variations between overhangs, both overall and within particular sites, is more marked than variations between different sites. At second glance, however, it would seem that this difference could be the result of some overhangs containing smaller samples - the 50% "men" at GH/E being obviously related to the fact that there are only eight figures in this little niche; likewise, the 77% "humans" in a population of only 13 figures at SR/S.

But this is not always a satisfactory explanation of variation between overhangs - vide the divergence between Q/CH (59 figures), Q/J (64 figures), Q/C (55 figures) and Q/P (36 figures), in respect of men, emus, fish, boomerangs, footprints, hand stencils and ovals; and C/I (94 figures) and C/2 (28 figures), in respect of women, flying foxes, emus, snakes, fish, boomerangs, hand stencils and ovals. At GH, (excluding GH/E), there seems to be an uneven distribution of flying foxes, birds, turtles, fish and elongates. At third glance, then, there seem to be valid differences amongst the larger overhangs, as well as the unevenly weighted distributions in shelters containing small, specialised populations.

This is apparently a lesser degree of variation between sites as a whole. This could mean that, whereas, the motif content of a particular overhang may have been controlled in some way, cultural or other factors did not operate to cause as much motif differentiation between galleries.

The same tabulation (Table 5:5) applied to form/colour combinations produces similar results, but the pattern is not quite so clear. There is a wider variation between overhangs at some sites than at others. Focusing on those overhangs which have more figures, which would thus tend to produce more valid results, shows that there is considerable variation between GH/A, B, C and D, and between Q/CH, J, C, and P, but
### Table 5:5

Comparison of percentages of form/colour combinations between individual overhangs at the same site and between sites. Percentages have been rounded off to whole numbers to facilitate comparison.

<table>
<thead>
<tr>
<th>Form/Colour combinations</th>
<th>Percentages at individual Overhangs</th>
<th>Percentages at sites</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GH/A</td>
<td>GH/E</td>
</tr>
<tr>
<td>R/-</td>
<td>50</td>
<td>42</td>
</tr>
<tr>
<td>W/-</td>
<td>*</td>
<td>1</td>
</tr>
<tr>
<td>Y/-</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>-/R</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>-/W</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>-/Y</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>R/W</td>
<td>*</td>
<td>2</td>
</tr>
<tr>
<td>R/Y</td>
<td>*</td>
<td>12</td>
</tr>
<tr>
<td>W/R</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>W/Y</td>
<td>*</td>
<td>2</td>
</tr>
<tr>
<td>Y/R</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>RS</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>WS</td>
<td>*</td>
<td>4</td>
</tr>
<tr>
<td>YS</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>Number of Figures</strong></td>
<td>42</td>
<td>50</td>
</tr>
</tbody>
</table>

* not represented at this site.
but not so much between PE/P and E. Whole sites appear to vary more in
this case than in respect of motifs.

Variance Analysis

The following test was designed to investigate further the degree of
homogeneity in the Laura sites, and in the individual overhangs at each
site. The overall difference between two overhangs can be expressed
numerically by the total of the differences between the percentages of
figures in each category of motifs or form/colour combinations at each
of the overhangs. The greater the actual degree of dissimilarity, the
larger this figure will be. A simple set of ideal examples is used to
demonstrate this point in Table 5:6. The degree of difference is the
figure at the bottom of the right hand column in each example - it is
the total number of percentage points by which the overhangs differ from
each other in respect of the categories listed. The maximum degree of
difference, when the overhangs are totally dissimilar, is 200.

Table 5:7 gives a real example from the Laura series, using the
percentages of motifs at GH/B and GH/C. These two shelters are 91 points
different in terms of the motifs present in them. The same test was
repeated, using the form/colour combinations and the resulting degree of
difference is 84 points. These shelters are, therefore, more different
in respect of motifs than in respect of form/colour combinations.

This calculation was then applied to all possible paired combinations of
overhangs which have 50 or more figures in them. There are nine of these,
giving 36 pairs. Two are at GH, three at Q, and two at PE, giving five
intra-site combinations, against 31 inter-site. The results are shown in
Table 5:8.

The five intra-site and the 31 inter-site results were averaged to give
the average degree of difference between overhangs at the same site and
overhangs at different sites. For comparison, the same procedure was
applied to five rock engraving sites recorded and tabulated by Edwards,
four in South Australia and one in Central Australia (1966a: 34), and the
results are shown in Table 5:9.
Table 5:6 Ideal examples showing method of calculation of percentage differences.

Example 1.

<table>
<thead>
<tr>
<th>Category</th>
<th>Sample X %</th>
<th>Sample Y %</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>70</td>
<td>-</td>
<td>70</td>
</tr>
<tr>
<td>B</td>
<td>30</td>
<td>-</td>
<td>30</td>
</tr>
<tr>
<td>C</td>
<td>-</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>D</td>
<td>-</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td></td>
</tr>
</tbody>
</table>

Total Difference = 200

Example 2.

<table>
<thead>
<tr>
<th>Category</th>
<th>Sample X %</th>
<th>Sample Y %</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>60</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>B</td>
<td>20</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>C</td>
<td>10</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>D</td>
<td>10</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td></td>
</tr>
</tbody>
</table>

Total Difference = 120

Example 3.

<table>
<thead>
<tr>
<th>Category</th>
<th>Sample X %</th>
<th>Sample Y %</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>B</td>
<td>20</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>C</td>
<td>20</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>D</td>
<td>20</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>E</td>
<td>5</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>F</td>
<td>5</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>G</td>
<td>5</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>H</td>
<td>5</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td></td>
</tr>
</tbody>
</table>

Total Difference = 120

Example 4.

<table>
<thead>
<tr>
<th>Category</th>
<th>Sample X %</th>
<th>Sample Y %</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>B</td>
<td>20</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>C</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td></td>
</tr>
</tbody>
</table>

Total Difference = 40
### Table 5:7 Calculation of Difference between Overhangs

<table>
<thead>
<tr>
<th>Motif</th>
<th>% at GH/B</th>
<th>% at GH/C</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>man</td>
<td>10</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>woman</td>
<td>6</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>human</td>
<td>22</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>kangaroo</td>
<td>4</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>flying fox</td>
<td>*</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>echidna</td>
<td>*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>dingo</td>
<td>*</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td>emu</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>scrub turkey</td>
<td>*</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>bird</td>
<td>8</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>snake</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>turtle</td>
<td>*</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>crocodile</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>fish</td>
<td>*</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>eel</td>
<td>8</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>stingray</td>
<td>*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>yam</td>
<td>*</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>plant</td>
<td>*</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td>boomerang</td>
<td>2</td>
<td>*</td>
<td>2</td>
</tr>
<tr>
<td>basket</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>bird track</td>
<td>*</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td>roo track</td>
<td>*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>footprint</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>hand stencil</td>
<td>12</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>other stencil</td>
<td>*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>elongate</td>
<td>20</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>oval</td>
<td>*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>other circular</td>
<td>*</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>miscellaneous</td>
<td>*</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td>non-figurative</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>clutch of eggs</td>
<td>*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>lizard</td>
<td>*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>saw-fish</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>horse</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Total Difference = 91**

---

<table>
<thead>
<tr>
<th>Form/Colour combinations</th>
<th>% at GH/B</th>
<th>% at GH/C</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>R/-</td>
<td>42</td>
<td>8</td>
<td>34</td>
</tr>
<tr>
<td>W/-</td>
<td>*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Y/-</td>
<td>2</td>
<td>*</td>
<td>2</td>
</tr>
<tr>
<td>-/R</td>
<td>16</td>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td>-/W</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>-/Y</td>
<td>6</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>R/W</td>
<td>2</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>R/Y</td>
<td>12</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>W/R</td>
<td>6</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>W/Y</td>
<td>2</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Y/R</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RS</td>
<td>12</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>WS</td>
<td>*</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>YS</td>
<td>*</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Total Difference = 84**
Table 5.8  Difference between overhangs in terms of motifs and form/colour combinations, expressed in percentage points.

<table>
<thead>
<tr>
<th>Pairs of Overhangs</th>
<th>Difference; Motifs</th>
<th>Difference; Form/Colours</th>
<th>Difference; Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>GH/B &amp; GH/C x</td>
<td>91</td>
<td>84</td>
<td>175</td>
</tr>
<tr>
<td>GH/B &amp; Q/CH</td>
<td>92</td>
<td>121</td>
<td>213</td>
</tr>
<tr>
<td>GH/B &amp; Q/J</td>
<td>88</td>
<td>151</td>
<td>239</td>
</tr>
<tr>
<td>GH/B &amp; Q/C</td>
<td>74</td>
<td>122</td>
<td>196</td>
</tr>
<tr>
<td>GH/B &amp; PE/P</td>
<td>97</td>
<td>113</td>
<td>210</td>
</tr>
<tr>
<td>GH/B &amp; PE/E</td>
<td>108</td>
<td>114</td>
<td>222</td>
</tr>
<tr>
<td>GH/B &amp; SR/M</td>
<td>84</td>
<td>103</td>
<td>187</td>
</tr>
<tr>
<td>GH/B &amp; C/l</td>
<td>82</td>
<td>111</td>
<td>193</td>
</tr>
<tr>
<td>GH/C &amp; Q/CH</td>
<td>95</td>
<td>105</td>
<td>200</td>
</tr>
<tr>
<td>GH/C &amp; Q/J</td>
<td>83</td>
<td>127</td>
<td>210</td>
</tr>
<tr>
<td>GH/C &amp; Q/C</td>
<td>89</td>
<td>64</td>
<td>153</td>
</tr>
<tr>
<td>GH/C &amp; PE/P</td>
<td>88</td>
<td>69</td>
<td>157</td>
</tr>
<tr>
<td>GH/C &amp; PE/E</td>
<td>105</td>
<td>80</td>
<td>185</td>
</tr>
<tr>
<td>GH/C &amp; SR/M</td>
<td>77</td>
<td>42</td>
<td>119</td>
</tr>
<tr>
<td>GH/C &amp; C/l</td>
<td>81</td>
<td>67</td>
<td>148</td>
</tr>
<tr>
<td>Q/CH &amp; Q/J x</td>
<td>106</td>
<td>124</td>
<td>230</td>
</tr>
<tr>
<td>Q/CH &amp; Q/C x</td>
<td>86</td>
<td>91</td>
<td>177</td>
</tr>
<tr>
<td>Q/CH &amp; PE/P</td>
<td>91</td>
<td>90</td>
<td>181</td>
</tr>
<tr>
<td>Q/CH &amp; PE/E</td>
<td>104</td>
<td>107</td>
<td>211</td>
</tr>
<tr>
<td>Q/CH &amp; SR/M</td>
<td>100</td>
<td>86</td>
<td>186</td>
</tr>
<tr>
<td>Q/CH &amp; C/l</td>
<td>56</td>
<td>138</td>
<td>194</td>
</tr>
<tr>
<td>Q/J &amp; Q/C x</td>
<td>84</td>
<td>97</td>
<td>181</td>
</tr>
<tr>
<td>Q/J &amp; PE/P</td>
<td>99</td>
<td>114</td>
<td>213</td>
</tr>
<tr>
<td>Q/J &amp; PE/E</td>
<td>114</td>
<td>93</td>
<td>207</td>
</tr>
<tr>
<td>Q/J &amp; SR/M</td>
<td>84</td>
<td>102</td>
<td>186</td>
</tr>
<tr>
<td>Q/J &amp; C/l</td>
<td>94</td>
<td>96</td>
<td>190</td>
</tr>
<tr>
<td>Q/C &amp; PE/P</td>
<td>95</td>
<td>55</td>
<td>150</td>
</tr>
<tr>
<td>Q/C &amp; PE/E</td>
<td>112</td>
<td>74</td>
<td>186</td>
</tr>
<tr>
<td>Q/C &amp; SR/M</td>
<td>80</td>
<td>51</td>
<td>131</td>
</tr>
<tr>
<td>Q/C &amp; C/l</td>
<td>86</td>
<td>55</td>
<td>141</td>
</tr>
<tr>
<td>PE/P &amp; PE/E x</td>
<td>85</td>
<td>51</td>
<td>136</td>
</tr>
<tr>
<td>PE/P &amp; SR/M</td>
<td>75</td>
<td>48</td>
<td>123</td>
</tr>
<tr>
<td>PE/P &amp; C/l</td>
<td>75</td>
<td>96</td>
<td>171</td>
</tr>
<tr>
<td>PE/E &amp; SR/M</td>
<td>90</td>
<td>69</td>
<td>159</td>
</tr>
<tr>
<td>PE/E &amp; C/l</td>
<td>92</td>
<td>88</td>
<td>180</td>
</tr>
<tr>
<td>SR/M &amp; C/l</td>
<td>76</td>
<td>76</td>
<td>152</td>
</tr>
</tbody>
</table>

Average difference: 89.4  90.9  180.3

x = intra-site pairs
The most important aspect of these results is the closeness of the four averages for the Laura paintings. This means that overhangs at different sites, which are separated by miles, are no more different from each other than overhangs at the same site which are separated by only a few yards. Conversely, overhangs at the same site do not resemble each other more than they resemble other shelters which are miles away. It seems likely, therefore, that the location of the site did not influence what was painted there, or the colours used, but that each overhang was an individual unit, generating its own constellation of motifs and colours.

The cave paintings in the Laura area are considerably more heterogeneous than the engraving sites in South and Central Australia, even though the latter are separated from each other by as much as 800 miles.

When the motif differences and the form/colour differences for each of the paired overhangs are added together, however, the results show an interesting distribution pattern in Table 5:10. Obviously, the eleven lowest figures, representing the eleven pairs which resemble each other most closely, are set off from the rest by a sharp break in the curve.
Table 5:10 Distribution of Combined Percentage Differences

<table>
<thead>
<tr>
<th>Range</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>110 - 120</td>
<td>x</td>
</tr>
<tr>
<td>121 - 130</td>
<td>x</td>
</tr>
<tr>
<td>131 - 140</td>
<td>xx</td>
</tr>
<tr>
<td>141 - 150</td>
<td>xxx</td>
</tr>
<tr>
<td>151 - 160</td>
<td>xxxx</td>
</tr>
<tr>
<td>161 - 170</td>
<td>xxxx</td>
</tr>
<tr>
<td>171 - 180</td>
<td>xxxx</td>
</tr>
<tr>
<td>181 - 190</td>
<td>xxxxxx</td>
</tr>
<tr>
<td>191 - 200</td>
<td>xxxx</td>
</tr>
<tr>
<td>201 - 210</td>
<td>xxx</td>
</tr>
<tr>
<td>211 - 220</td>
<td>xxx</td>
</tr>
<tr>
<td>221 - 230</td>
<td>xx</td>
</tr>
<tr>
<td>231 - 240</td>
<td>x</td>
</tr>
</tbody>
</table>

Total = 36

These eleven pairs (Table 5:11) are comprised of the overhangs SR/M (five times out of 22), GH/C (four times), PE/P (four times), Q/C (four times), C/1 (three times) and PE/E (twice), so that all of the sites in the study are represented by an overhang in this group.

Table 5:11 Order of Similarity Between Overhangs

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>GH/C &amp; SR/M</td>
<td>119 points difference</td>
</tr>
<tr>
<td>2.</td>
<td>PE/P &amp; SR/M</td>
<td>123 &quot; &quot;</td>
</tr>
<tr>
<td>3.</td>
<td>Q/C &amp; SR/M</td>
<td>131 &quot; &quot;</td>
</tr>
<tr>
<td>4.</td>
<td>PE/P &amp; PE/E</td>
<td>136 &quot; &quot;</td>
</tr>
<tr>
<td>5.</td>
<td>Q/C &amp; C/1</td>
<td>141 &quot; &quot;</td>
</tr>
<tr>
<td>6.</td>
<td>GH/C &amp; C/1</td>
<td>148 &quot; &quot;</td>
</tr>
<tr>
<td>7.</td>
<td>Q/C &amp; PE/P</td>
<td>150 &quot; &quot;</td>
</tr>
<tr>
<td>8.</td>
<td>C/1 &amp; SR/M</td>
<td>152 &quot; &quot;</td>
</tr>
<tr>
<td>9.</td>
<td>GH/C &amp; Q/C</td>
<td>153 &quot; &quot;</td>
</tr>
<tr>
<td>10.</td>
<td>GH/C &amp; PE/P</td>
<td>157 &quot; &quot;</td>
</tr>
<tr>
<td>11.</td>
<td>PE/E &amp; SR/M</td>
<td>159 &quot; &quot;</td>
</tr>
</tbody>
</table>

Although, overall, the overhangs are comparatively heterogeneous, these six form a group whose level of homogeneity is above average. Their similarity is expressed numerically by their combined percentage differences (119 - 159), which are well below the average for the whole set (180.3).

It seems, therefore, as if each of the sites in the study includes one overhang which resembles equivalent shelters at each of the other sites. The six overhangs involved (GH/C, Q/C, PE/P, PE/E, SR/M, C/1) are those
which contain a wide variety of motifs and colour combinations, and many layers of superimposed figures. Admittedly, five out of these six are the largest of the nine overhangs selected (on the basis of size) for paired comparison, which partly explains the "evening-out" tendency. This is not, however, a total explanation, as Q/CH and Q/J are both larger than Q/C, yet the latter appears in the homogeneous group.

The usual composition of a Laura site is, therefore, one overhang of this type, plus at least one other shelter which has a more specialised range of motifs and/or colours, and which does not, in most cases, closely resemble any other overhang (this is demonstrated by the balance of the paired percentage differences). The exceptions are Q/Q and SR/S, and Q/FF and SR/FF (see also pages 132-5). Considering that Q/C and SR/M are also the third closest pair in the comparative set, it would seem that these two sites (Quinkan and Split Rock) have somehow been constructed to a set formula, with a heavily painted, comprehensive overhang, and one containing a small number of impressive human figures with particular stylistic characteristics, spatially separated by a shelter containing a predominance of flying foxes.

Giant Horse may be a less clear example of the same pattern. If GH/C is taken as equivalent to Q/C and SR/M, and GH/E, with its isolated group of elongated bichrome figures of men with long ears plus a woman in the same style, be equated with Q/Q and SR/S, then it is noticeable that the only figures of flying foxes in the whole of Giant Horse Gallery are to be found in GH/D and at the western end of GH/C, i.e. located between the other two types. They do not dominate a single overhang, as in the other two sites, but their positioning is analogous.

In general terms, however, Giant Horse, Quinkan, Split Rock and Crocodile Galleries all conform to a pattern, with one overhang typical of the group of six generalised shelters, plus from one to five non-typical, specialised overhangs.

"Pig and Emu", on the other hand, consists of two large, generalised overhangs, which resemble each other fairly closely, i.e. it does not conform to the pattern described above. In Rock Art of South-East Cape York, Trezise described three small overhangs in the vicinity of Pig Gallery, which contain a variety of motifs. Charts of these were not available in Canberra when I was compiling the lists from which the data
for this analysis has been taken, so, because of their spatial proximity (40 yards), I treated Pig and Emu together as one site, unlike Trezise, who separated them. The pattern revealed by this comparison of similarities and differences between individual overhangs may indicate that Trezise's intuitive judgement was correct, and mine wrong. If a large, generalised overhang normally functions as the core of one site (so far defined by spatial separation from other clusters of overhangs), then within the comparatively small domain of Pig and Emu, there may be two such foci, each "requiring", or, at any rate, producing, a large panel of assorted paintings, i.e., PE/P and PE/E. The small overhangs later described by Trezise may be the normal complement of specialised auxiliary shelters.

To check on the impression, previously formed by Tables 5:4 & 5, that whole sites varied somewhat less than individual overhangs, and less in respect of motifs than form/colour combinations, the same test was applied to a set of paired site comparisons (Table 5:12).

<table>
<thead>
<tr>
<th>Pairs of sites</th>
<th>% Difference; Motifs</th>
<th>% Difference; Forms/Colours</th>
<th>% Difference; Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>GH &amp; Q</td>
<td>58</td>
<td>82</td>
<td>140</td>
</tr>
<tr>
<td>GH &amp; PE</td>
<td>78</td>
<td>70</td>
<td>148</td>
</tr>
<tr>
<td>GH &amp; SR</td>
<td>79</td>
<td>60</td>
<td>139</td>
</tr>
<tr>
<td>GH &amp; C</td>
<td>59</td>
<td>80</td>
<td>139</td>
</tr>
<tr>
<td>Q &amp; PE</td>
<td>78</td>
<td>66</td>
<td>144</td>
</tr>
<tr>
<td>Q &amp; SR</td>
<td>65</td>
<td>82</td>
<td>147</td>
</tr>
<tr>
<td>Q &amp; C</td>
<td>55</td>
<td>90</td>
<td>145</td>
</tr>
<tr>
<td>PE &amp; SR</td>
<td>81</td>
<td>58</td>
<td>139</td>
</tr>
<tr>
<td>PE &amp; C</td>
<td>67</td>
<td>92</td>
<td>159</td>
</tr>
<tr>
<td>SR &amp; C</td>
<td>78</td>
<td>84</td>
<td>162</td>
</tr>
<tr>
<td>Average</td>
<td>69.8</td>
<td>76.4</td>
<td>146.2</td>
</tr>
</tbody>
</table>

The average degrees of difference, in all three categories - motifs, form/colour combinations and combined - are well below the same figures for overhangs (Tables 5:8 & 9). This means that, although individual shelters are very diverse, there must be some evening-out effect among the shelters at a given site, to produce inter-site results which show much less
To conclude this section, it appears that, in the Laura area, the basic unit is the individual overhang, and that, overall, there is a high level of heterogeneity among the 18 overhangs used in this analysis, indicated by a comparative study of the largest ones (the percentage tables show, without further manipulation, that the smaller shelters are even more diverse - e.g. GH/E, Q/Q, etc.). The degree of difference is the same, whether the overhangs are found at the same site, and separated by only a few yards, or at different sites, miles apart.

Despite this overall tendency, there is some discernable patterning of the occurrence of overhangs at sites. There is one group of overhangs which demonstrably resemble each other, and there is one of these present at each of the five sites. These "core" overhangs are accompanied by specialised "auxiliary" overhangs (it is the extreme diversity of these latter which produces the overall tendency to heterogeneity). At two, or possibly three sites (Quinkan, Split Rock and Giant Horse), the contents and positioning of the auxiliary overhangs displays even more adherence to a common formula. Sites are normally well separate from each other (at least half a mile), and include only one typical large, generalised overhang. The presence of two such overhangs in a very small area at Pig and Emu could mean that this site is atypical, or that, whatever factors operated to produce the usual pattern, in this case created two such units at very close range.

Also despite the marked diversity of individual overhangs, and the fact that sites are made up of several such overhangs, the proportions of motifs and form/colour combinations at sites as a whole show much less variation, i.e. the various overhangs tend to even each other out.

**Relationship between Motifs and Colours**

The next test was designed to find out whether there is any association between motifs and form/colour combinations. The percentages of each motif to fall into each of the eleven colour combinations (excluding stencils) were therefore tabulated.
Table 5:13 Tabulation of motifs and colours. Percentages are given in whole numbers to facilitate comparison.

<table>
<thead>
<tr>
<th>Motif</th>
<th>Number</th>
<th>R/-</th>
<th>W/-</th>
<th>Y/-</th>
<th>-/R</th>
<th>-/W</th>
<th>-/Y</th>
<th>R/W</th>
<th>R/Y</th>
<th>W/R</th>
<th>W/Y</th>
<th>Y/R</th>
</tr>
</thead>
<tbody>
<tr>
<td>man</td>
<td>151</td>
<td>7</td>
<td>*</td>
<td>*</td>
<td>26</td>
<td>7</td>
<td>17</td>
<td>7</td>
<td>8</td>
<td>18</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>woman</td>
<td>63</td>
<td>6</td>
<td>*</td>
<td>*</td>
<td>22</td>
<td>3</td>
<td>16</td>
<td>13</td>
<td>13</td>
<td>17</td>
<td>10</td>
<td>*</td>
</tr>
<tr>
<td>human</td>
<td>180</td>
<td>23</td>
<td>2</td>
<td>2</td>
<td>27</td>
<td>10</td>
<td>4</td>
<td>18</td>
<td>8</td>
<td>7</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>kangaroo</td>
<td>60</td>
<td>20</td>
<td>*</td>
<td>*</td>
<td>13</td>
<td>2</td>
<td>3</td>
<td>35</td>
<td>7</td>
<td>15</td>
<td>5</td>
<td>*</td>
</tr>
<tr>
<td>flying fox</td>
<td>48</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>54</td>
<td>2</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>15</td>
<td>29</td>
<td>*</td>
</tr>
<tr>
<td>echidna</td>
<td>9</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>22</td>
<td>*</td>
<td>11</td>
<td>44</td>
<td>22</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>dingo</td>
<td>5</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>60</td>
<td>20</td>
<td>20</td>
<td>*</td>
</tr>
<tr>
<td>emu</td>
<td>27</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>7</td>
<td>11</td>
<td>*</td>
<td>48</td>
<td>26</td>
<td>4</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>scrub turkey</td>
<td>12</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>25</td>
<td>*</td>
<td>58</td>
<td>*</td>
<td>*</td>
<td>17</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>bird</td>
<td>25</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>56</td>
<td>8</td>
<td>12</td>
<td>8</td>
<td>*</td>
<td>8</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>snake</td>
<td>19</td>
<td>5</td>
<td>*</td>
<td>*</td>
<td>16</td>
<td>*</td>
<td>11</td>
<td>32</td>
<td>26</td>
<td>11</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>turtle</td>
<td>36</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>36</td>
<td>3</td>
<td>36</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>*</td>
</tr>
<tr>
<td>crocodile</td>
<td>8</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>25</td>
<td>13</td>
<td>*</td>
<td>25</td>
<td>25</td>
<td>13</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>fish</td>
<td>48</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>17</td>
<td>2</td>
<td>8</td>
<td>15</td>
<td>21</td>
<td>38</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>eel</td>
<td>34</td>
<td>6</td>
<td>*</td>
<td>*</td>
<td>26</td>
<td>3</td>
<td>3</td>
<td>18</td>
<td>15</td>
<td>26</td>
<td>*</td>
<td>3</td>
</tr>
<tr>
<td>stingray</td>
<td>3</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>67</td>
<td>*</td>
<td>33</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>yam</td>
<td>6</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>67</td>
<td>*</td>
<td>33</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>plant</td>
<td>4</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>25</td>
<td>75</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>boomerang</td>
<td>17</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>35</td>
<td>12</td>
<td>6</td>
<td>18</td>
<td>12</td>
<td>12</td>
<td>6</td>
<td>*</td>
</tr>
<tr>
<td>basket</td>
<td>6</td>
<td>*</td>
<td>17</td>
<td>*</td>
<td>33</td>
<td>17</td>
<td>*</td>
<td>17</td>
<td>17</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>bird track</td>
<td>7</td>
<td>86</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>14</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>'roo track</td>
<td>10</td>
<td>30</td>
<td>10</td>
<td>*</td>
<td>20</td>
<td>10</td>
<td>*</td>
<td>*</td>
<td>30</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>footprint</td>
<td>12</td>
<td>*</td>
<td>25</td>
<td>*</td>
<td>25</td>
<td>*</td>
<td>*</td>
<td>75</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>elongate</td>
<td>47</td>
<td>28</td>
<td>*</td>
<td>*</td>
<td>23</td>
<td>2</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>21</td>
<td>2</td>
<td>*</td>
</tr>
<tr>
<td>oval</td>
<td>26</td>
<td>8</td>
<td>*</td>
<td>*</td>
<td>42</td>
<td>9</td>
<td>2</td>
<td>4</td>
<td>14</td>
<td>19</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>other circular</td>
<td>19</td>
<td>73</td>
<td>5</td>
<td>*</td>
<td>*</td>
<td>5</td>
<td>*</td>
<td>*</td>
<td>5</td>
<td>10</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>misc. non-fig.</td>
<td>59</td>
<td>8</td>
<td>7</td>
<td>3</td>
<td>39</td>
<td>5</td>
<td>8</td>
<td>8</td>
<td>5</td>
<td>12</td>
<td>3</td>
<td>*</td>
</tr>
<tr>
<td>TOTAL (excl. stencils)</td>
<td>954</td>
<td>12</td>
<td>0%</td>
<td>27%</td>
<td>5%</td>
<td>10%</td>
<td>14%</td>
<td>8%</td>
<td>17%</td>
<td>5%</td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

* not represented

The distribution of colours displayed by each motif which comprises more than 20 figures was next compared with the distribution for the total of all motifs, by the same method used in the comparative analysis of sites and overhangs. Table 5:14 is a sample of these calculations.
Table 5:14 Calculation of difference between distribution of colours.

<table>
<thead>
<tr>
<th></th>
<th>% of &quot;man&quot;</th>
<th>% of total</th>
<th>difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>R/-</td>
<td>7</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>W/-</td>
<td>*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Y/-</td>
<td>*</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td>-/R</td>
<td>26</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td>-/W</td>
<td>7</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>-/Y</td>
<td>17</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>R/W</td>
<td>7</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>R/Y</td>
<td>8</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>W/R</td>
<td>18</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>W/Y</td>
<td>7</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Y/R</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Total Difference = 28

* not represented

The results, in order of divergence from the common distribution pattern, are:

man = 28; woman = 32; elongate = 41; human = 43; miscellaneous non-figurative = 44; eel = 44; oval = 45; kangaroo = 58; fish = 69; turtle = 71; bird = 74; flying fox = 102; emu = 104.

It is noticeable that human and non-figurative motifs are closer to the overall distribution pattern, but animal motifs tend to diverge further from it. This is because there are concentrations of particular colour combinations with particular motifs: flying fox, 54% are -/R and 29% are W/Y; emu, 48% are R/w; birds, 56% are -/R; turtle, 36% are -/R and 36% are -/Y; fish, 38% are W/R; etc.

It is tempting to speculate that, if certain colour combinations were prescribed for the depiction of certain specific referents, then the figures which we categorise as "human" may actually comprise a variety of such subjects. They could represent, for example, a variety of supernatural spirits, mythological characters or real human beings, each depicted in an appropriate colour combination. This would give our lumped-together groups of "men", "women" and "humans" a diverse distribution of colours. Similarly, it is likely that the non-figurative motifs
actually represent a variety of subjects. The animal figures, on the other hand, might represent only a limited range of subjects - say - the appropriate totemic ancestors, or real huntable animals, and thus a narrower range of colours would be appropriate for depicting them, thus producing the tighter pattern described above.

Superimpositions

If the Laura paintings incorporated some very clear superimposition sequence - say - all (or most) red figures over all yellow, or all stencils over all positive figures, then there would be no need to subject this aspect to quantitative analysis - it would be more sensible to accept the verdict of observation. There is no such clearly visible pattern. Trezise has drawn up a chronology of artistic phases which he attributes to relative superimpositions:

1. Petroglyphs in a highly symbolised style of tectiforms and geometric shapes
2. Petroglyphs in a more naturalistic form with human figures
3. Petroglyphs of natural figures outlined or infilled with paint
4. Stencil and outline pictographs
5. Silhouette monochromes in light and dark red
6. Silhouette bichromes in light body with dark outline and decoration
7. Silhouette bichromes in dark body with light colour outline and decoration
8. A mixture of 5. and 6. but mainly in smaller figures
9. Large bichrome figures in a variety of colour combinations and associated with European influence
10. Monochromes in the crude "mudman" style

(Trezise, 1971: 126)

Of course, his observation of the Laura paintings is much more extensive than mine, and his perception of this superimposition sequence has probably evolved during his long experience in the galleries. But, in my experience, this sequence is not sufficiently obvious as to impress the more infrequent visitor (as is, for example, the sequence of geometric non-figurative paintings over stencils at many sites in the Carnarvon Ranges, central Queensland). Because I cannot see Trezise's sequence, I feel obliged to try and construct one by quantitative methods.

An analysis of superimpositions consists of asking the question "What is over or under something else?" The "what" and the "something else" have to be definable and comparable categories, as in Trezise's list - "outline
Thus far I have used two parallel systems of categorising the Laura paintings - motifs and form/colour combinations. There are 27 standard motif categories. If superimpositions were quantified in terms of one motif over or under another - man over emu, echidna over elongate, etc. - there would be an enormous number of possible sequences, with a very small number of examples in each situation. The 14 form/colour combinations would be almost as unmanageable. In order to undertake an analysis, therefore, the number of categories needs to be reduced to a manageable scale, by lumping some of them together according to some system. Because of the definition of motifs as an observer-based typology (see Chapter 3), the 27 motifs cannot be lumped together without introducing even more Western cultural bias - for example, if all "animal" motifs were to be opposed to all "human" motifs, this would seem to represent a Graeco-Christian view of the natural world.

Form/colour combinations are more susceptible to objective re-grouping. The following four-category system, based on form and ignoring colours, but similarly coded, was adopted.

A/- : any colour outline, no infill  
-/B : no outline, any solid colour  
A/B : any colour outline, any solid colour infill  
S  : any colour stencil

These categories are comparable with those used by Trezise in his relative chronology. In my terms, his sequence would read:

1. 2. and 3. not applicable  
4. S, A/-  
5. -/B  
6. A/B  
7. A/B  
8. -/B, A/B  
9. A/B  
10. -/B

The various overhangs were re-tabulated according to these four categories, and also according to the number of superimposition combinations, and this basic data was then used in two attempts to set up a superimposition sequence by quantitative methods.
Simple inspection of the sites shows that the four categories do not fall into any clear cut pattern. None of them is consistently or preponderantly over or under any of the others. The task of the analysis was, therefore, to determine whether there had been any change through time in the proportions of the four types. This cannot be resolved by a simple enumeration of paired sequences. If A/- is found over -/B five times, and -/B over A/- ten times, then obviously they overlapped in time, but it would seem that -/B is, on the whole, more recent than A/-. But this is related to the number of A/- and -/B figures present in the sample. If there are only ten A/-'s altogether, and 100 -/B's, then the likelihood of -/B covering A/- during the interim period is vastly increased, even if A/- eventually succeeded -/B.

The first attempt to set up a superimposition sequence of changes in "fashions" of the four types was a failure, but it is worth setting out here because it inadvertently demonstrated something else about the paintings. The procedure was applied to several of the larger overhangs, with similar results, but GH/C is here used as an example.

Table 5:15 Superimpositions at overhang GH/C

<table>
<thead>
<tr>
<th>Forms</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/-</td>
<td>20</td>
</tr>
<tr>
<td>-/B</td>
<td>84</td>
</tr>
<tr>
<td>A/B</td>
<td>87</td>
</tr>
<tr>
<td>S</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>212</td>
</tr>
</tbody>
</table>

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A/- over A/-</td>
<td>-/B over A/-</td>
<td>3</td>
<td>A/B over A/-</td>
<td>4</td>
<td>S over A/-</td>
</tr>
<tr>
<td>A/- over -/B</td>
<td>-/B over -/B</td>
<td>28</td>
<td>A/B over -/B</td>
<td>29</td>
<td>S over -/B</td>
</tr>
<tr>
<td>A/- over A/B</td>
<td>-/B over A/B</td>
<td>47</td>
<td>A/B over A/B</td>
<td>54</td>
<td>S over A/B</td>
</tr>
<tr>
<td>A/- over S</td>
<td>-/B over S</td>
<td>3</td>
<td>A/B over S</td>
<td>1</td>
<td>S over S</td>
</tr>
</tbody>
</table>

* not represented

Total number of superimpositions = 176

How often, in proportion to its numbers, is each category covered by other figures?

A/- is covered 7 times. $\frac{7}{20}$ (no. of A/-) = 0.35

-/-B is covered 57 times. $\frac{57}{84} = 0.68$
A/B is covered 108 times.  
\[ 108 - 87 = 1.24 \]

S is covered 4 times.  
\[ 4 - 21 = 0.19 \]

Therefore the order is : A/B = most often covered by other figures, in proportion to the number of times it appears in this shelter; followed by -/B, A/-, S. The presumed sequence is therefore :

1. A/B
2. -/B
3. A/-
4. S

However, the reverse proposition can also be tested - how often does each category cover other figures?

A/- covers other figures 5 times.  
\[ 5 - 20 = 0.25 \]

-/B covers other figures 81 times.  
\[ 81 - 84 = 0.96 \]

A/B covers other figures 88 times.  
\[ 88 - 87 = 1.01 \]

S covers other figures 2 times.  
\[ 2 - 21 = 0.09 \]

Therefore the order is : S covers other figures least often, in proportion to the number of times it appears; followed by A/-, -/B, A/B. The presumed sequence is therefore :

1. S
2. A/-
3. -/B

This result is the reverse of the first sequence established by this method. Therefore what can be inferred is not a sequence of fashions, gradually replacing each other through time, but the fact that A/B figures are most often involved in superimpositions, both over and under other figures, and S's are least likely to cover or be covered by other figures. That is, stencils are usually placed on blank areas, but outline/infill figures are often painted on areas of the wall which are crowded with overlapping figures. The other two types vary between these poles.

A second attempt to set up a superimposition sequence was made by comparing the relative occurrence of superimposed pairs of forms in the nine overhangs which contain 50 or more figures. The procedure was based on the following series of assumptions.
Let there be two distinct forms of painted figures, called X and Y. It is clear that they overlapped in time, because there are some of X superimposed on Y, and some Y over X. But it is hoped to demonstrate whether there has been a change in the relative popularity of the two forms - i.e. a fashion for one, gradually succeeded by a fashion for the other, with an interim period when they were both used. Finding this out is complicated by the fact that they are not present in equal numbers. If they were equal, then the laws of chance would suggest that the one which most often covered the other would be more recent, providing that chance was the only factor determining their relative positioning on the cave wall. (It is quite possible that factors other than chance were in operation - e.g. some cultural influence - but, as the paintings are prehistoric, and there is no way of knowing about these factors, one just has to disregard this unpalatable truth - for the purposes of this exercise. In other words, a superimposition sequence can be established, but it may or not represent change through time).

However, they are not equal; X > Y.

Let the number of X over Y = a, and the number of Y over X = b. Then if b > a, it is likely that Y is the more recent fashion, because, although the lesser in number, it has more often covered up X. But if a > b, then no real conclusion can be made about the sequence of X and Y. It could be that X is later than Y, and has more often covered the smaller group of earlier figures. They could be absolutely simultaneous - i.e. both evenly distributed through the same period of time, but because more of X have been painted during that period, there has been more chance of them covering Y than of the reverse. Or, Y could even be later than X, but the period of its popularity has not been long enough for it to cover as many X-type paintings as the X's covered Y's during the overlapping period.

GH/C will serve to repeat the procedure with actual data. At GH/C, A/- = 20, -/B = 84. i.e. -/B > A/-. If the use of these two forms was exactly contemporary, one would expect to find, all things being equal, more 0/B over A/- than A/- over -/B. This is in fact what happens:

- /B over A/- = 3
A/- over -/B = 0
But at the same overhang, \( A/- = 20, \ A/B = 87 \). \( A/B > A/- \).

\[
\begin{align*}
A/B & \text{ over } A/- = 4 \\
A/- & \text{ over } A/B = 5,
\end{align*}
\]

which is the reverse of the predicted relationship if these two forms were absolutely contemporary. Although this could have been caused by factors completely beyond our control, it is also possible that the reversal represents a sequence in time - a difference in the popularity of the two forms at different times in the history of the site - with \( A/- \) gradually succeeding \( A/B \).

Also at GH/C, \( /B = 84, \ A/B = 87 \). \( A/B > /-B \).

\[
\begin{align*}
A/B & \text{ over } /-B = 29 \\
/-B & \text{ over } A/B = 47. \text{ Therefore, (say) } /-B
\end{align*}
\]
succeeds \( A/B \).

All possible paired combinations at the 9 major overhangs were tested in this way, giving 38 comparisons - 19 negative (like the first example given above) and 19 positive (like the second and third - providing indications of a possible sequence)

Note that negatives do not cancel out positives. Two forms could be in a time sequence and still give a negative result in this test.

Results:

<table>
<thead>
<tr>
<th></th>
<th>No. of times that this sequence occurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>( S ) succeeds ( A/- )</td>
<td>1</td>
</tr>
<tr>
<td>( S ) succeeds ( /-B )</td>
<td>3</td>
</tr>
<tr>
<td>( S ) succeeds ( A/B )</td>
<td>4</td>
</tr>
<tr>
<td>( A/- ) succeeds ( /-B )</td>
<td>2</td>
</tr>
<tr>
<td>( A/- ) succeeds ( A/B )</td>
<td>3</td>
</tr>
<tr>
<td>( A/B ) succeeds ( A/- )</td>
<td>1 (this is not incompatible with a previous result, but is taken as being outweighed by it)</td>
</tr>
<tr>
<td>( A/B ) succeeds ( /-B )</td>
<td>3</td>
</tr>
<tr>
<td>( /-B ) succeeds ( A/B )</td>
<td>2</td>
</tr>
</tbody>
</table>

These results, when sorted out, give an overall sequence of:

1. \( /-B \) (solid figure, no outline)
2. \( A/B \) (solid figure with outline)
3. \( A/- \) (outline, no infill)
4. \( S \) (stencil)

The thread of connections from which this sequence has finally been spun is
so tenuous that this result should only be taken as a tentative suggestion of possible changes in the relative popularity of the four forms in the Laura paintings.

It does run counter to Trezise's sequence, which places stencils and outline figures exclusively in its early phases, and monochromes and bichromes in the later ones (see page 166). Admittedly, there are nine figures in the Laura area which must post-date European contact - three horses and one rider, three pigs and two "policemen", apparently wearing peaked caps and uniform jackets and carrying rifles.* Three of these nine figures are -/B in form, and the other six are A/B. Although the sequence worked out above cannot relate with any usefulness to individual figures, but only to general shifts of artistic emphasis on certain forms, the nature of these nine figures (presumably among the most recent in the area, unless the bulk of the Laura cave paintings were done in the period from 1872 to 1922, which is not completely impossible) is somewhat damaging. But my sequence, slenderly supported as it is, tends to undermine Trezise's elaborate chronology, which has been asserted rather than demonstrated.

In Chapter 4 I asserted, on purely descriptive grounds, that the Laura cave paintings cohere into a single style. It is implicit in the terminology of art history that a style is also a cultural episode which is more or less continuous in time, maintaining a cluster of characteristics for a period before it terminates or develops into a different style.

The Laura cave paintings lack any clearly visible sequence in the use of motifs, colours or forms. When the occurrence of superimposition among the major forms - outlines, solid areas, etc. - was tabulated, no consistent numerical pattern appeared. The two different procedures which were instituted to tease a sequence out of the mass of conflicting numerical data were not notably successful - the first produced contradictory results which were so close (A/B succeeds -/B three times, -/B succeeds A/B twice) that they have almost no significance. Thus, the postulated pattern of change through time in the popularity of the major forms is either, non-existent, very weak, or two subtle to be revealed by the methods herein adopted.

* This inference does not conflict with my assertion that the appearance of a prehistoric motif does not inform the European observer of its identity. As the shapes of these motifs resemble the shapes of horses, pigs and policemen, it is very likely that they were modelled on these animals, some time after 1872. Error lies in assuming that these paintings were intended by the artists to represent manifestations of white culture and in linking them with inter-racial conflicts of the contact period.
The results of this quantitative analysis of superimposition therefore suggest that the Laura cave paintings do not include more than one style, in the second sense delineated above - namely - a single episode in the art history of the sites, with no significant alterations in the assemblage of characteristics displayed throughout a continuous period. The fact that Trezise's (putatively) subjective sequence is at variance with the one compiled by quantitative procedures confirms, in my mind, the impression that there are probably no real changes worth worrying about, and that the Laura Cave Painting Style may more usefully be considered as one unit in the art history (or prehistory) of Australia.
Chapter 6

Prehistoric Rock Art in Australia: A Proposed Sequence of Styles.

Rock engravings in the Laura area

For me, the most interesting thing about the Laura galleries is the juxtaposition of paintings and engravings in different styles on the same rock surfaces. Their association was first discovered in 1967 by a television cameraman while he was examining a cave wall very closely in order to take a light reading. He observed that the brightly coloured paintings in Crocodile Overhang, Quinkan Gallery cover an extensive frieze of pecked engravings (Trezise, 1969: 127-31).

Before this incident, the only rock engravings known in the Laura area were some in the bed of the Laura River, near the road crossing at the settlement. From this point on, however, Trezise has gone on to discover a large number of engraved figures on the walls and floors of caves; some of them, like those in Crocodile Overhang, are underneath layers of painted figures. Those engravings which had been recorded by November 1968 were described in detail in an article for Mankind by Woolston and Trezise (1969), but I would like to reproduce some of the same material here, in order to make a visual comparison with engravings in other parts of Australia.

Fig. 6:1 shows the painted wall of Crocodile Overhang; Fig. 6:2, a graphic representation of the pecked engravings which lie below the coloured figures. It can be seen that their forms consist of bands, thick outlines and solid figures. The only motifs in this panel are bird tracks and "tectiforms" or "line mazes", i.e. irregular clusters of interconnected bands and solid areas.

More of the engravings discovered by Trezise are depicted in Figs. 6:3. The technique in each case is pecking. Except for those from the bed of the Laura River, all are in caves, where most are associated with paintings in the normal Laura style. It can be seen from these records that the Laura engravings have a comparatively narrow range of forms and
Fig. 6:1. A large crocodile dominates many layers of figurative paintings on the wall of Crocodile Overhang, Quinkan Gallery. Underneath the paintings are non-figurative pecked engravings.

Fig. 6:2. (after Woolston and Trezise, 1969:122) Graphic record of pecked engravings found underneath the paintings shown above. Motifs consist of bird tracks and "tectiforms" composed of bands, thick outlines and solid figures.
Fig. 6:3. (after Woolston and Trezise, 1969) Pecked engravings at various sites near Laura.
motifs. This impression is confirmed by Woolston and Trezises' article. Their quantitative data (rather than the illustrations) show that bird and macropod tracks predominate among these engravings. Figurative motifs (apart from tracks) constitute only a small fraction of the total; among these, human figures predominate. Crescents, circles, groups of pits and tectiforms dominate the non-figurative motifs which make up the balance of the 238 figures described in the article (Woolston and Trezise, 1969).

There is also one exceptional group of atypical figures in two rock shelters near the Hann River, 60 miles west of Laura (124-6). As well as being pecked into the rock surface, they have also been painted with red ochre. For this reason, Trezise identified them as the product of a transitional period, when paintings were replacing engravings in this area. One thing which makes this theory plausible is that, like the Laura cave paintings, the Hann River engravings are predominantly figurative, including several human figures, a lizard, eels or catfish, and a handprint, as well as a number of crescents/boomerangs and only one bird track. The tracks and non-figurative motifs which comprise most of the engravings found in the Laura sites are not present here.

The Hann River sites aside, the Laura engravings are strongly reminiscent, in terms of technique, form and motifs, of another well-documented body of Australian rock art - the pecked engravings of South and Central Australia which have been recorded and tabulated by Edwards. For the sake of immediate visual comparison, a number of recordings from Edward's articles on these engravings are included here (Fig. 6:4). The numerical dominance of bird and macropod tracks at these sites is not reflected in Edward's published graphics, as he chose to represent more of the unusual motifs, including "star" designs, lizards and tectiforms. The table reproduced in Fig. 2:2 of this thesis gives the proportional representation of these motifs.

The range and character of the engraved motifs in both sets of sites (Laura and South/Central Australia) are the most telling points of similarity. Figurative motifs, other than the ubiquitous tracks, are scarce in both. The simple motifs, such as circles and crescents, automatically display a strong visual resemblance which proves nothing about their cultural affinity, but some of the more complex figures in the two sets, such as the tectiforms, show similar design features.
Fig. 12. The Rockholes and Panaramitee Hill.

Fig. 13. Panaramitee North.

Fig. 6:4. (from Mountford and Edwards, 1963) Pecked engravings at Panaramitee, South Australia. Macropod and bird tracks outnumber all other motifs at this site, which includes circles, human footprints, groups of dots, tectiforms and other designs.
Fig. 6:4. (cont.) A small number of figurative motifs (apart from tracks) including several lizards and an emu, are engraved at Panaramitee.
But one of the most important features of the South/Central engraving sites is the consistency of the proportions of different motifs. Edwards has found that macropod tracks consistently average 35.4%, bird tracks 28.7%, and circles 24.5%, with all other motifs comprising very small proportions of the total. These figures are derived from an analysis of sites containing thousands of individual figures (Edwards, 1966a: 34). The whole body of Laura rock engravings (excluding the Hann River engravings/paintings) comprises only 238 figures.

It seems, therefore, too much to expect that the proportions of different motifs among the Laura engravings might parallel the South/Central results. A comparison of percentages between the Laura engravings and the South/Central sites tabulated by Edwards (1966a: 34) shows a low level of association (Table 6:1). The biggest discontinuity between the two areas is created by the reversed weighting of circles and crescents.

Table 6:1 Comparison of percentages of engraved motifs in the Laura area and in South/Central Australia.

<table>
<thead>
<tr>
<th>Motif</th>
<th>All Laura engravings (excluding Hann River engravings/paintings)</th>
<th>South and Central Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number*</td>
<td>Percentage</td>
</tr>
<tr>
<td>Macropod tracks</td>
<td>42</td>
<td>17.6</td>
</tr>
<tr>
<td>Bird tracks</td>
<td>48</td>
<td>20.2</td>
</tr>
<tr>
<td>Human footprints</td>
<td>32</td>
<td>13.4</td>
</tr>
<tr>
<td>Other figurative</td>
<td>20</td>
<td>8.4</td>
</tr>
<tr>
<td>Circles</td>
<td>19</td>
<td>8.0</td>
</tr>
<tr>
<td>Crescents</td>
<td>46</td>
<td>19.3</td>
</tr>
<tr>
<td>Group of pits</td>
<td>7</td>
<td>2.9</td>
</tr>
<tr>
<td>Tectiforms</td>
<td>9</td>
<td>3.8</td>
</tr>
<tr>
<td>Other Non figurative</td>
<td>15</td>
<td>6.3</td>
</tr>
<tr>
<td>Total</td>
<td>238</td>
<td>99.9</td>
</tr>
</tbody>
</table>

* These figures have been taken from Woolston and Trezise, 1969, but they have been altered slightly to conform to normal practise, for example pairs of tracks have been counted as one figure, not two.

@ These categories are not listed separately in Edwards, 1966, being included in other units which total 379 motifs, or 3.4%.
It is my opinion that there are enough points of similarity between the engravings of the Laura area and those of South and Central Australia to say that they are all in the same style. The following description applies to all but a very few of the engraved figures found in both regions:

- **Technique**: pecked
- **Form**: bands, thick outlines and solid figures
- **Motif**: bird and macropod tracks, plus a small range of simple non-figurative motifs; figurative motifs apart from tracks are scarce
- **Size**: 6" - 18"
- **Character**: none

Both groups of figures, therefore, assimilate to my definition of A Style - i.e. a large number of figures, most of which display most of a small range of traits selected from the five descriptive levels used in the system proposed in Chapter 3. Some variation between the two groups is admitted, but, to my mind, it is outweighed by the similarities.

While it is relatively harmless to assert the stylistic homogeneity of a group of sites located contiguously within a defined region (Sydney, Cobar, etc.); it is a weightier matter to suggest that two or more groups of art sites in areas which are widely separated display the same style.

Possession of a common artistic style is often used to imply an historical connection, or, more precisely, the diffusion of culture between the two areas. This may be true in general terms (obviously various aspects of Aboriginal culture spread through the continent at different times), but measurable differences between the two bodies of stylistically similar rock art serve as a reminder that the historical connection may have been comparatively weak, or spread over a long period of time.

This archaeological technique has also been abused. Selected döppelgangers have been used to assert diffusion routes spanning the earth's surface (see Fraser, 1965, "The Heraldic Woman : A Study in Diffusion"; but contrast with Heine-Geldern, 165-221 in the same volume, who describes stylistic similarities between ancient and contemporary Southeast Asian cultures, without asserting more than an art-historical connection within this region). The stylistic similarity between the engravings at
Laura and in South and Central Australia is based on their common
technique and the shared range of forms, motifs and size, as well as
their overall visual character, rather than on selected "look-alikes".

The Panaramitee Style.

Edwards has presented a case for the probable antiquity of these
engravings in South and Central Australia (1971: 356-67). Firstly, the
close similarity in the numerical proportions of different motifs at
widely separated sites which each contain thousands of individual
figures provides a strong reason for classing and treating these
engravings as one unit. This contention is supported by the strong
stylistic similarity of most of the motifs at many different sites.
The pecking technique, showing precision control in the placement of
each pit, was probably achieved by indirect percussion. Bands,
-thick outlines and solid figures are the basic forms throughout all these
sites. Figs. 6: 5 to 8 show these features of this body of engravings.

Even though most of the motifs are simple, it is still very striking to
see them repeated identically in sites more than 1000 miles apart -
very realistic representations of kangaroo and emu tracks, perfect
concentric circles, symmetrical fern-leaf designs, etc. While the
familiar suite of motifs - tracks, circles, crescents, groups of dots,
tectiforms, lizards - is found everywhere, each site generally has a
small group of motifs which is particular to it - "owls" at Red Gorge
(Mountford and Edwards, 1964), faces at Cleland Hills (Edwards, 1968a)
and so on.

A number of characteristics of the carvings suggest that they are more
than several thousand years old. Some constitute direct evidence, others
circumstantial; while others merely suggest supportive arguments.
Edwards has compiled them in an article called "Art and Aboriginal
Prehistory" in (Mulvarey and Golson, 1971, 356-67), but they are worth
summarising here.

A convincing, although not conclusive, argument for the antiquity of
these engravings is their present geological state. They are found on
various types of hard rock outcrops - indurated sandstones, limestones,
granites and quartzite. The normal surface of these rocks is patinated
Fig. 6:5. Panaramitee Style. Pecked engravings of circles, kangaroo tracks, human footprint and tectiform on hard, exposed rock surfaces at Panaramitee Station, South Australia.

Photos: R. Edwards.
or case-hardened to a small but variable depth, and this outer skin is darker than, and sometimes a completely different colour to the fresh inner material. This alteration of the outer surface is a process of chemical change, caused by moisture penetration. It stops at a critical depth, dependent on the rock type. When the engravings were made, they penetrated the outer layer and exposed fresh, unpatinated rock. The ensuing colour contrast must have constituted their main visual effect. This has been cancelled by the re-patination of the engraved surfaces, which are now, in almost all cases, uniform with the surrounding unmarked rock. This means that their age is at least as great as the duration of the case-hardening process. As this depends on moisture penetration, and all the sites under immediate consideration are in the arid zone, this may well represent a considerable period - in the order of thousands rather than hundreds of years. Trendall's view (relating to dolerite from Depuch Island) that it takes one million years, seems a little extreme in these circumstances (1964: 88). In a similar situation in the Negev desert, Iron Age engravings which are approximately 2,500 years old have not re-patinated to match the surrounding rock (Edwards, 1971: 361). These comparisons do no more than indicate degree of magnitude. Demonstration of age by patination requires detailed petrological research on the various rock types, correlated with studies of climate and micro-environment.

My own observation at several of these sites is that the engravings themselves are not particularly eroded - that is, the contours of the individual pits are still visible, and are only slightly softened by removal of the original precise edges (this is generally enough to obscure superimpositions, however). In this respect they differ from the outline engravings on soft sandstone in the Sydney-Hawkesbury area, which suffer erosion to the point of obliteration.

They are, however, threatened by a different destructive process, namely the massive disintegration of the rocks on which they are carved. Edwards paints a dismal picture:

These processes sometimes start with frost action, which allows moisture and dust to penetrate the engraved rock pavements, gradually prising them apart. In some places trees and shrubs take root in the crevices, accelerating the destruction. Almost without exception pavements are splitting and slabs are working loose. Earth movements have caused engraved blocks to fall away from cliff faces, and large boulders have been shattered, while
Fig. 6:6. Panaramitee Style. Pecked engravings of emu tracks, group of dots (a motif which may represent a clutch of eggs in modern ethnographic art), and circle at Florina Station, South Australia.

Photo: R. Edwards.
there are innumerable examples where the critical stage has passed and only small engraved sections survive to indicate where presumably extensive galleries once existed. It possibly is indicative of great age that the missing pieces do not lie loosely on the surface, but have eroded completely ............ No precise time scale can be provided for this destruction, but several geologists are of the opinion that a considerable period is involved. (Edwards, 1971: 360)

Plate XI illustrating this article is particularly convincing; it shows the sole remaining fragments of a horizontal outcrop which was once apparently covered with engravings.

Modern Aborigines consistently disclaim authorship of this group of engravings (see page 42), although if found at a site which is now regarded as the sacred creation of a totemic ancestor, they sometimes incorporate them into the relevant myths.

In 1937 and 1940, Mountford observed Aborigines making carvings on rocks at the Granites and in the Musgrave Ranges. Unlike the pecked engravings, these works were executed by pounding directly on the rock surface with a pebble in one case and an upper grinding stone in the other. This treatment bruised the superficial patinated layer and exposed the lighter coloured rock beneath. The result of this technique is easily distinguishable from the peckings presumed to have been made by indirect percussion (contrast Figs.6:5 and 6 with Fig.6:15, bottom photo). The pits are shallow and diffuse, and the outline of the figure is more ragged, because of diminished control. (Mountford, 1955).

A number of similar poundings were found at other sites in Central Australia. They stand out from the peckings (the two types were found together at at least one location) because they are quite unpatinated, suggesting their comparatively recent execution. This is confirmed by the inclusion of contemporary themes - cars, lorries, white men, alphabetical symbols - but other pounded motifs closely resemble those
Fig. 6:7. Panaramitee Style. Group of pecked engravings on Panaramitee Station, South Australia, showing range of motifs typical of many large engraving sites scattered throughout southern and central Australia.

Photo: R. Edwards.
focus upon the peckings - kangaroo and bird tracks, circles and meanders. Similar motifs are of course found in contemporary Aboriginal art in this region, onбойкина and other sacred year.

Fig. 6:8. Panaramitee Style. Group of pecked engravings in N'Dahla Gorge, Central Australia, including kangaroo tracks, emu tracks and circles.

Photo: R. Edwards.
found among the peckings - kangaroo and bird tracks, circles and tectiforms. Similar motifs are of course found in contemporary Aboriginal art in this region, or tjuringas and other sacred gear, in ground paintings and cave paintings, and even in modern works produced for sale.

It has been suggested that some of the very large bird and animal tracks found among the prehistoric peckings could have been modelled on those of the extinct Pleistocene fauna ("emu" tracks 45 cm long = Genyornis; Tindale, 1951, 381-2). This view has become less outlandish since the discovery that the dates of Australia's human and megafaunal inhabitants overlap. It should be kept in mind, however that prehistoric representations could have been as easily influenced by the artists' imagination as by reality (see Fig 6: 8a). The absence of dingo tracks among the pecked, fully-patinated engravings may be more significant, as it seems likely that these animals were not introduced onto the continent before 8000 B.P. (Mulvaney, 1975: 138).

In the desert areas where these sites are found, they are virtually always in close proximity to regular sources of water, and near them are also found traces of occupation - fire hearths consisting of piles of stones and charcoal, and surface scatters of flaked stone pieces. These frequently include many large, steeply trimmed flakes and cores, and exclude backed blades, adze flakes, flaked stone points and other
classic small tool types.* In archaeological excavations on the mainland, these conditions are duplicated in early assemblages, generally more than 4000 years old. This connection is of course very tenuous.

But it has been strengthened by the results of an excavation undertaken by Mulvaney in 1966 at a site called Ingaladdi near Katherine in the Northern Territory. He dug at the base of a sandstone outcrop that is thickly engraved with pecked tracks and abraded grooves which are patinated and weathered, as well as unpatinated and apparently modern engravings of a sailing ship and other motifs and many paintings of traditional and contact subjects (Mulvaney, 1969: Plates 44, 45, 68 70-2). He found that:

The upper sandy layers of this shelter, dating to the last 3000 years, are a classic locality for tula adze-flake and point industries. Below this, there was a depositional break covering almost 2000 years, while the lower deposits consisted chiefly of rock rubble which accumulated between 7000 and 5000 years ago, apparently under weathering conditions differing from later times. The cultural hiatus is as obvious

Providing that the absence of recent tool types is not due to selective surface collecting, this feature of the engraving sites implies that they were not used for occupation during the last few thousand years. Two possible connections with modern ethnological observations are brought to mind. Firstly, Gould observed in the Western Desert that "There is always a distinct separation between the water hole and habitation area....(because of) .... the need to allow game to approach the water...and the need to allow everyone to collect water regardless of kin-avoidance rules" (1968: 118). If this habit developed several thousand years ago, and persisted until the present, recent tool types would not be found near the water even though it was being regularly used by Aborigines. Secondly, it is possible that the engraving sites became sacred, and were only visited for ceremonial purposes during the last few thousand years, despite their proximity to water. Strehlow describes ceremonial sites called pmara kutata within the territory of the Aranda which were highly sacred and thus uninhabited. Some pmara kutata included permanent water supplies, and these functioned as game reserves where animals remained unharmed during drought periods. Thus they were an important aspect of the Aranda's adaptation to the desert environment (Strehlow, 1965: 143-4). It could be extremely interesting to conduct a survey of Strehlow's pmara kutata to see whether any of them have rock engravings nearby. Gould (1968: 120) found that rock engravings in the Western Desert were sacred. If their sanctity extends very far back in time, recent tool types would be absent from their vicinity. These ethnographic behaviour patterns do not necessarily prove that the engravings are ancient, but they provide reasonable explanations for the existence of water holes in the desert which do not have evidence of recent occupation close by them.
as the depositional change. Primary stone flakes and rounded cores testify that during the earlier phase, flake-tool knappers frequented the site. Preliminary inspection indicates that almost all retouched artifacts are large scrapers, including rounded, domed, steeply trimmed, and concave types, while numerous cores were utilised as core-scrapers, reminiscent of small horsehoof cores. (Mulvaney, 1969: 147-50)

These lower levels also contained detached pieces of sandstone bearing pecked engravings of emu and kangaroo tracks and abraded grooves. The level immediately above them, 1.1 – 1.2 metres deep, was dated to 4,920 ± 100 B.P. (ANU - 58) and the level below, 1.7 – 1.8 metres deep, was dated 6,800 ± 270 B.P. (ANU - 60) (Edwards, 1971, 363). As the engravings were deeply eroded, and it is unlikely that they were carved on loose pieces of rock, it seems probable that they were made some time before the period from 5000 to 7000 B.P., when they fell from the adjacent wall. Their cultural association is with the early large flake and core phase of Australian prehistory, unless they were made by an even earlier group who refrained from leaving any stone artifacts at Ingaladdi.

In 1969, Stockton excavated at a sacred site in Central Australia called Kurringa, which consists of a water hole, an occupation floor littered with numerous millstones, and about 100 pecked engravings which were studied by Edwards in the same year. At a depth of 35 cm., in apparently undisturbed deposit, he found a detached piece of sandstone which has a solid circle pecked into it, a millstone fragment and a serrated flake (Stockton, 1971: 57-8). Thus a motif typical of the Panaramitee style was associated with artifacts also found in Pleistocene occupation deposits in the arid zone. Mulvaney accepted Stockton's inference that the engravings are therefore associated with "the Australian core tool and scraper tradition" (Mulvaney, 1975: 281-2), and listed this as evidence for ANTIQUITY OF ART in the annotations to Chapter 10 of the 1975 edition of The Prehistory of Australia (303).

Finally, engravings displaying a range of motifs similar to that of the South and Central Australian peckings are found in Tasmania. They are not numerous, and the relative proportions of different motifs are not maintained as on the mainland, but the presence here of circles, tracks and tectiforms may indicate a southern extension of this style before the island was cut off by rising sea-level about 10,000 years ago. (Meston, 1931 and 1932; Sims, 1970; Mulvaney, 1975: cover and Plates 55-6). Their
situation is analogous to that of the early stone tool types which persisted in Tasmania, where later implement types do not make an appearance. Mulvaney says "it seems likely that Tasmanian art, like cremation funerary rites, was an ancestral heritage." (1975: 170) See Figs. 6:9 to 10.

I feel that Edwards has presented a convincing case for the considerable antiquity of this rock engraving style in Australia. The evidence is as good as can be expected, given the present state of rock art studies in this country. As the engravings themselves cannot be dated by direct means, they must wait upon chance discovery in association with C14, as in the case of Ingaladdi. Edwards' quantitative analysis of motifs, demonstrating that the various sites in South and Central Australia comprise an homogenous unit, enables the inference of age at Ingaladdi to be extended to other locations, at least in general terms. To conclude, it seems reasonable to believe that this style is older than 7000 years (although not all figures or sites are necessarily this old) until direct contrary evidence is presented.

Although Edwards has documented a number of sites containing thousands of these pecked engravings, and demonstrated their homogeneity, he has never specifically distinguished this body of rock art as a "style", or used any particular name to designate it as a unit. I now need to do this, as I wish to compare it with other styles of rock art in Australia, and discuss their relative age and distribution. It could be named descriptively, as the "Tracks and Non-figurative Style", but this is rather clumsy. Its distribution actually extends beyond "South and Central Australia", the geographical term which I have been using temporarily. I prefer to revive the old archaeological custom of naming a cultural unit (e.g. a stone tool industry) by a type-site, and I shall henceforward refer to the Panaramitee Style.

This usage has several virtues. The engraving site at Panaramitee manifests a classic assemblage of the style under consideration. Edwards counted 1003 motifs, of which kangaroo tracks comprise 34%, emu tracks 24%, circles 26%, dots 6%, crescents 2%, human feet 2%, lizards 1% and all other motifs 5%. Typically, it also has a small number of attention-getting "others" - the well-known Panaramitee "crocodile" (or "fishing net", or "magic stick", or "etc.") and figurative depictions of one fish and one emu. Using the name of a single site does not imply a regional
Fig. 6:9. Sundown Point, west coast of Tasmania. Pecked engravings of circles. Note resemblance to engravings in South and Central Australia shown in previous figures.

Photo: P. Sims.
Fig. 6:10. Mt. Cameron West, Tasmania. Prehistoric engravings on limestone. See also Mulvoney, 1969: Plate 79.

Photo: R. Edwards.
distribution, which is inappropriate in this case. Many of the archaeologists and some anthropologists currently working in Australia have visited Panaramitee, and may therefore be able to visualise the site and the motifs found there.

Figurative motifs of human and animal figures, as well as of their tracks, occur occasionally in this art style. As well as the Panaramitee fish and emu (see Fig. 6:4), there are also human faces at Cleland Hills (Figs. 6:11 and 12), small human figures with large "headdresses" composed of radiating lines at N'Dahla Gorge (Edwards, 1971: Plate XVII) and numerous figures of lizards at many of the sites (Fig. 6:4). This seems to indicate that figurative motifs apart from tracks were known in Australia during its early prehistory, but they were used infrequently by the rock engravers. Later art styles were dominated by figurative motifs (see below).

The bulk of the engravings found at these sites are pecked, but some abraded grooves are also present at some sites, e.g. Nackara Springs (Edwards, 1965a: Plate 2B), Cleland Hills (Edwards, 1968a: Fig. 8b), Ingaladdi (Edwards, 1971: Plate XIX). These grooves occur in groups on particular slabs of rock or on cave walls.

Classic sites in this style, closely resembling Panaramitee in size and components, are widely distributed in the arid zone. Edwards has described concentrations of these sites in the Manunda-Yunta drainage area, south-east of the Flinders Ranges (Panaramitee, Florina, Tiverton, Pitcairn, Winnininnie, Nackara Springs and others - see map in Edwards, 1964: 658) and around Alice Springs (Coraminna, N'Dahla Gorge, Tukulunga, Cleland Hills, etc. - see map in Bickel, 1970), but these are only the areas that he has (partially) surveyed for sites. Panaramitee, Florina, Tiverton, Winnininnie and Tukulunga were counted, and show consistent motif percentages (Edwards, 1966a). Earlier publications by Basedow (1914) and Hale and Tindale (1925) indicate that another cluster exists in the Flinders Ranges (Red Gorge, Balparana, Wilkindinna, Owieandana, etc. - see map in Hale and Tindale, 1925: 54). Other classic sites outside these three areas are known - Ingaladdi, Eucolo Creek, Sturts Meadows - but the intervening areas have not been surveyed to discover whether the true distribution is continuous. Sturts Meadows shows motif percentages consistent with Edward's figures (see below, pages 216-7 ).
Fig 6:11. Thomas Reservoir, Cleland Hills, western Central Australia. This site includes several motifs resembling human faces, and this unusual human figure.

Fig 6:12 Pampaquro Style. This engraved human figure, located at Thomas Reservoir, Cleland Hills is composed of circles and curved lines. Additional elements of these simple design elements, plus imprinted and bird tracks, make up most of the balance of the 367 motifs at the site.

Photo: R. Edwards.
Fig. 6:12. Panaramitee Style. This engraved human face at Thomas Reservoir, Cleland Hills is composed of circles and curved lines. Individual examples of these simple design elements, plus macropod and bird tracks, make up most of the balance of the 387 motifs at this site.

Photo: R. Edwards.
A related group of sites are those which consist of engravings that
display the same technique, forms and range of motifs as the Panaramitee
style, but which do not conform to the same pattern of relative
proportions of different motifs. The Laura carvings, for example, show
all the same features as Panaramitee engravings - enough to say that
they are essentially in the same style. The Mount Cameron West engravings,
in the extreme north-west of Tasmania, similarly resemble the Panaramitee
style, except in the matter of motif breakdown.

Then there is a third group of sites about which little has been
published, but enough to indicate possible connections with the Panaramitee
style. I have surveyed the literature on Australian rock art, and
discovered a number of sites consisting of engravings which are
described as "pecked" (or some intelligible equivalent) and including
macropod and bird tracks, circles, tectiforms, etc., but excluding other
figurative motifs. In Table 6:3, sites Nos. 25 to 34 are of this type.
The published records of them are inadequate, but they all include
photographs or drawings which support their inclusion under "Panaramitee
Style". These records suggest areas of the continent where further
research on rock art styles and distribution could be profitable.

Tables 6:3 lists sites in the Panaramitee Style, and Fig.6:23 shows their
locations. This map shows that this style was very widely distributed -
possibly extending into the eastern coastal region as well as northern
Queensland and Tasmania. The age of the engravings at these peripheral
sites cannot be inferred from the evidence which dates the classic sites
in the arid inland. Enormous distances and different environments are
involved, and the connecting areas have not been surveyed for rock art
sites of this kind. I have, therefore, nothing to say about the absolute
age of the Panaramitee-style engravings at Laura or any of the other
peripheral sites, although there are indications of the relative sequence
of this and other art styles at some of these sites.

Simple and Complex Figurative Styles.

By contrast with this consistent, homogenous and widely distributed style
of engravings with its narrow range of techniques, forms and motifs, the
rest of Australian rock art appears at first wildly heterogeneous and
regionalised. Several regional styles have been identified as such thus far in this work - the Sydney-Hawkesbury Outline Engraving Style (p115), the Cobar Cave Painting Style (p115) and the Laura Cave Painting Style (p144). There are dozens of similar units in Australia; some are easily identifiable, like the Wandjina Style in the Kimberley Region, while others which await further definition and exploration of their boundaries, such as the non-figurative pounded engravings found in the vicinity of the Gascoyne and Murchison Rivers in Western Australia (McCaskill, 1968).

It would require a major research effort to delineate all such styles within Australian rock art, and to plot their distribution. Coverage in the literature is very uneven, with some major bodies of rock art known only by brief articles in unlikely journals, for example, the paintings in various limestone caves near Chillagoe, in northeastern Queensland, which have been superficially reported in the Journal of the Sydney Speleological Society (Hawkins, 1971). My own cognizance of this field has been greatly expanded by papers at recent ANZAAS Congresses and visits to many sites in various parts of Australia; the deficiencies of the current published records are glaring.

I have, however, found that some of these styles can usefully be grouped into two large and generalised categories. Each of these two major categories is composed of a number of regional bodies of art which have common stylistic characteristics. They can be distinguished from each other in terms of stylistic characteristics, distribution (on a continental, not a regional scale) and relative age. These two categories, which are further described below, have been named Simple Figurative Styles and Complex Figurative Styles. These units differ from the Panaramitee Style in that they comprise a number of separate regional styles. They do not include every Australian rock art style other than Panaramitee.

Many of the regional styles are dominated by figurative motifs. They constitute 78% of the Sydney-Hawkesbury carvings, 81% of engravings in the Pilbara Region, 84% of the Laura paintings and 86% of cave paintings on Groote Eylandt. These percentages include a variable proportion of animal and human tracks, which are nowhere as dominant as in the Panaramitee style. Among the Sydney-Hawkesbury engravings they constitute 20%; Pilbara, 27%; Laura paintings, 3%; Groote Eylandt, 3%.
As discussed in Chapter 3, pages 76 & 108 the majority of these figurative motifs conform to a pattern of crude naturalism. Whether a motif is engraved or painted, in outline or solid form, it usually consists of a very simplified silhouette of a human or animal model. Most portrayals are strongly standardised. Human beings are depicted frontally, animals and birds in profile, snakes and lizards from above. Normally only the minimum visual requirements for recognition of the motif are fulfilled by the shape of the figure. Identification depends on the position and proportion of body masses. Fine details of anatomy and body contours are not shown, not is there any representation of surface texture, or of any features within the outline, except eyes. Decorative details, where found, are also relatively simple, for example, outlining in a different colour in the case of painted solid figures. Infills are selected from a small repertoire of stripes, bars, dots, etc. This combination of traits and lack of other distinguishing features was designated, in the terminological system proposed in Chapter 3, as "no character".

Many thousands of figurative motifs in sites distributed through a large section of the continent could be thus described. There are exceptions, but these form separate patterns, and their spatial distribution is limited to comparatively small areas. Those regional rock art styles which are absolutely dominated by motifs which conform closely to the basic pattern of figurative representation described above constitute Simple Figurative Styles.

The Sydney-Hawkesbury engravings and the Laura paintings are good examples of styles which fall into this category. Of course they display totally different techniques and forms, which are very distracting in a superficial visual comparison. It is necessary to filter out the effects which are dictated by these factors, and observe the basic draughtsmanship of equivalent motifs from each region (Figs. 6:13 and 14). The intention is not to establish unity of style. Style is based on a combination of technique, form, motif, size and character (see Chapter 3, pages 92-109 for definition) and these two bodies of rock art can clearly be distinguished as separate styles. This categorisation into Simple Figurative is based on motif and character alone, and it is used only to lump together certain regional styles which share features from these descriptive levels.
Fig. 6:13. Simple Figurative Style. Outline engravings of human figure, echidna, wallaby, fish and lizard on horizontal sandstone surfaces near Sydney.
Other examples of Simple Figures, northern and central coast of Australia, district, western N.S.W., in northern Queensland, off the east coast on Depers Island, off the mouth of the N. T. R. S. and also in the literature relating to this area it will be noted that the oldest, western, northern and central in western N.S.W. are the most. Simple Figurative Style are the very small number of figures in a Panamanian Style, but they never approach the.

In at least two parts of the style a recent style. At least, the poleswaws. The larger polesaws, wall of a cave near Whito, another.

The contents of this area is approximately one and one of their statues, human hands, noses, hands, tails, and feet, skin models. It is likely for without human models and "the compositions", early days in the first. speculating whether this might have been painted drawings are the earliest early colonial history.

Fig 6:14. Simple Figurative Style. Cave paintings of human figure, dingo, crocodile, kangaroo and fish near Laura.
It must be pointed out that not every single figurative motif in these regions conforms rigidly to the description set out above. A small fraction of the assembled motifs vary in some respect; they show elongated bodies and limbs, profile representations of human figures (although usually not very effective), anatomical details such as mouths or elbows, movement portrayed by bent limbs, more complicated decorative infills, etc., do exist in these areas. But very few figures in Sydney or Laura ever display more than one exceptional feature, and the actual number of such cases is low.

Other examples of Simple Figurative Styles are the cave drawings of the northern and central coast of N.S.W.; cave paintings in the Cobar-Bourke district, western N.S.W.; in the New England area, northern N.S.W.; and on Groote Eylandt, off the east coast of Arnhem Land; and rock carvings on Depuch Island, off the coast of Western Australia; and near Dampier, W.A. Techniques, forms and size vary greatly, but basic resemblances in motifs are suggested in the accompanying illustrations (Figs. 6: 13 to 15) and in the literature relating to sites 35 to 64 in Table 6:3.

It will be noted that the distribution of these styles is around the northwestern, northern and eastern peripheries of the continent. Those sites in western N.S.W. are the most inland examples (see Fig. 6: 23). Simple Figurative Styles are not found in the interior of Australia. A very small number of figures in this mode occur sporadically at Panaramitee-style sites, and among Central Australian cave paintings, but they never approach the position of dominating whole sites.

In at least two parts of the east coast, Simple Figurative art is the most recent style. At Laura, the cave paintings include horses, pigs and policemen. Two large bulls are drawn in charcoal and red ochre on the wall of a cave near Minto, south of Sydney.* At Devils Rock, Maroota,

---

* No record of this site has yet been published. These figures are approximately six and eight feet in length. The general shape of their bodies, heads and legs, and anatomical details such as cloven hooves, tails and genitalia strongly suggest that cattle served as models. It is interesting to note that both animals are shown without horns. Minto is on a direct route between Port Jackson and "The Cowpastures", whence fled those cattle that escaped in the early days of the First Settlement. It is, therefore, worth speculating whether bulls carried on board small sailing ships might have been polled. It may then be just possible that these drawings are the Aboriginal documentation of an event in Australia's early colonial history.
In the north of Sydney, there is an interchange with traditional Aboriginal knowledge (Brogan, 1967; Blake 1977). Black V789 has been found in remote parts of the Ngalakgan country. Aboriginal origin is unlikely due to personal knowledge. However, one of the living cultures around Port V12 has Indigenous cultural origins. This way of life is also displayed in the Kimberley region (Cook 1971; Brogden, 1973; Eckersley 1970). Although these styles are not that which was demonstrated in the past, they now, in anA, are slowly being superceded by the Black V789 style. The Ngalakgan country was a great variety of art, including rock art, diagrams, engravings, and other forms. Some of these styles are very similar to rock art outside this area. The Ngalakgan style was once a great variety of art, including rock art, diagrams, engravings, and other forms. Some of these styles are very similar to rock art outside this area.

**Fig. 6.15.** Simple Figurative Style. Human figure, kangaroo and birds at Dampier, W.A.
to the north of Sydney, there is an engraving of a sailing ship, interlaced with traditional Aboriginal motifs of a kangaroo and several boomerangs (Megaw, 1967: Plate VIIIb). Other carvings of ships have been found in remote parts of the Hawkesbury catchment, where a non-Aboriginal origin is unlikely (Sim, 1966: 28-9 and Plan 9, plus personal knowledge). Anyway, early settlers wrote of carvings as part of the living culture around Port Jackson (Angas, 1847: 272-3).

Complex Figurative Styles are found exclusively in the coastal regions of the north-western quadrant of the continent. They are the Mimi and X-ray cave painting styles of the Arnhem Land escarpment (Mountford, 1956: 109-81; Brandl, 1973; Edwards, 1974), both Bradshaw and Wandjina styles in the Kimberley region (Crawford, 1968) and the Kurangara style displayed at certain engraving sites in the Pilbara (Wright, 1968). Although these styles are extremely diverse, their common characteristic, and that which distinguishes them from Simple Figurative Styles, is that they are, in some respect, more sophisticated than crudely naturalistic.

Among the Mimi stick-figures, the elongation of limbs and torso noticed occasionally in Simple Figurative Styles (e.g. Laura's quinkans) grades up to maximum attenuation - single strokes of paint. Simultaneously, these figures display a command of movement - they run, they jump, they throw spears, they flap unwieldy bundles of weapons, dilly bags, goose-wing fans. The depiction of action, effective at this level, is totally absent outside the north-west.

The Mimi Style includes human figures other than stick-figures, and these are equally exotic to the Simple Figurative tradition. They feature a great variety of highly decorative, multicoloured infills and head-dresses, and elegantly and impossibly curved limbs and bodies. Polychrome women, whose anatomy seems to consist of flexible plastic tubes, sway languidly in a gentle, invisible breeze. Extreme versions of this style are contorted human figures whose elongated limbs, torsos and genitals resemble tangled spaghetti. Sexual themes are common and explicit in this art, unlike the Simple Figurative Styles, in which they are absent or low-key.

While the human figure is the subject of special attention in the Mimi Style (although other motifs are involved) X-ray paintings, which co-exist with Mimi on the same cave walls, most commonly feature animals, birds,
fish and reptiles. Within the outline of these figures, delicate line-work is used to portray internal anatomy - bones, breathing apparatus, the heart, the gut, eggs within the reproductive tract, etc. In some figures, these internal features are shown realistically, while in others they are simplified, tending towards a decorative pattern. As all four basic colours may be used in a single figure, a cave wall covered in X-ray paintings presents a blaze of colour. The artists responsible for this style were highly prolific, and the caves of the Arnhem Land escarpment are full of this art, now deteriorating at an apparently rapid rate (Edwards, 1974: 104-16). See Figs. 6:16 and 17.

The Wandjina figures of the Kimberley region are much less varied, but their standardised form is striking enough. White always provides a background which extends beyond the margin of the figure. As the latter is composed mainly of linework, it appears to float as a semi-transparent form in front of the ground - a ghost seen against a white sheet. The head is surrounded by at least one halo, usually in solid red, but this feature may be elaborated with concentric haloes, short rays, dots and other details. The eyes are generally solid black, with red lashes, and the nose is always shown, but the mouth never. Most but not all Wandjinias have bodies, which are divided at armpit level - solid white above, fine red stripes below. Other motifs found with the Wandjinias, and in the same style, are built up in the same way - white background, multi-coloured linework, and identical decorative details, although the silhouettes of these animals, birds and reptiles are relatively simplified. Thus, the hallmark of this style is a complex and consistent stereotype.

On the same rock surfaces, but often partially coloured by Wandjina whitewash, are found the delicate Bradshaw paintings. These motifs have much in common with the Arnhem Land Mimis - they are small human figures, shown in profile, moving gracefully, carrying weapons and other objects, wearing headdresses and other ornaments. Their special feature is the presence of almost realistic body contours - their limbs are drawn in profile with correct musculature. Many Bradshaw figures resemble the rock paintings of South African Bushman (Crawford, 1968: 81-90).

Further south, in the Upper Yule River area, in the Pilbara, are the Kurangara figures - yet another specialised variety on the human motif. These engravings are pounded, and almost unpatinated. They stand out
Fig. 6.16. Complex Figurative Styles. at Noorlumge, western Arnhem Land. These figures combine a number of specialised characteristics—"flexible" limbs, complex decorative infill, apparent genital emphasis, polychrome colouring, X-ray features—which are not found in figurative styles outside the north-west of Australia.

Photo: R. Edwards.
Fig. 6:17. Complex Figurative Style. Kangaroo, turtle and fish in complex X-Ray Style, plus flying foxes in figurative style, Nangaloar, western Arnhem Land.

Photos: R. Edwards.
clearly against the dark surfaces of jagged boulders that rise in steep hills above the flat plains of this landscape. Kurangara men and women are generally shown in profile, and have beaked faces, elongated bodies, enlarged genitals, and long flexible arms and legs, which are bifurcated at the ends instead of having hands and feet (Wright, 1968: 50). Sexual themes are common, and, by Australian rock art standards, ingeniously varied. These highly stereotyped Kurangara are a minority among the predominantly figurative motifs at these sites, although many of the other human figures also appear to reflect a sexual emphasis - enlarged genitals or representations of intercourse (Wright, 1968: 55-9). Another distinctive characteristic of recent pounded engravings in the Pilbara is their excellent design qualities. The Kurangara figures in particular, as well as many other motifs in this region strongly resemble good modern graphics. These complex figurative traits are most in evidence at sites near the Upper Yule River, but the majority of the thousands of motifs in the Pilbara region could best be described as Simple Figurative. See Figs. 6: 18 and 19, and Wright, 1968.

Taken together, Mimi, X-ray, Wandjina, Bradshaw and Kurangara constitute a group of figurative styles which display a variety of complex features well outside the simple range of basic naturalism. Although they are so heterogeneous in most respects, their equivalent degree of visual sophistication and their limited distribution argue for a grouping in opposition to the Simple Figurative Styles. I have therefore categorised them as Complex Figurative, and plotted their distribution and that of Simple Figurative Styles, on a map of Australia (Fig. 6: 23).

Relative Dating of Rock Art Styles.

Except for Mimis in Arnhem Land and Bradshaw figures in the Kimberley, the Complex Figurative Styles seem to be the most recent rock art in their respective locales. Aborigines who own the sites which contain X-ray paintings are able to identify particular species with precision and confidence, and to explain their significance in terms of contemporary religious concepts (Elkin, 1952). A very few are known to have been painted in the recent past by specific artists. Paintings of recently-introduced artifacts - ships, cars, rifles, etc. - are sometimes found with the traditional subjects, and their forms, decorative infills, size and
Fig. 6:18. (after Wright, 1968)
Complex Figurative Style.
Stereotyped Kurangara figures found in the Pilbara region have some affinities with Mimi and Bradshaw figures.
Fig. 6:19. (after Wright, 1968) Complex Figurative Style. Some pounded engravings of Kurangara spirits and other motifs in the Upper Yule River area of the Pilbara are reminiscent of modern graphic designs.
character resemble those of the X-ray figures sufficiently to suggest stylistic incorporation (Edwards, 1974: Plate 12).

X-ray figures consistently over-lie Mimi; it is clear that the latter constitute an earlier phase of Arnhem Land cave art, although this does not demonstrate their absolute age. Local Aborigines are much vaguer about their significance than they are about X-ray paintings - their comments tend to be interpretations based on their own cultural experience, different from but equivalent to a European interpretation of a prehistoric motif. (Brandl, 1973: 171-8). Modern bark paintings by Aborigines often duplicate X-ray cave paintings most faithfully, but although elongated human figures are also frequently portrayed, none of them approach the delicacy of Mimi paintings, or depict movement as effectively as the cave artists did. See Berndt, 1964; contrast Plates 22 and 60 with Plates 36, 37 and 66; also Kupka, 1965: frontispiece, and Edwards and Guerin, 1969.

In the Kimberley, Bradshaw and Wandjina figures clearly form a sequence parallel to Mimi and X-ray in Arnhem Land. In fact, a comparison of the Mimi figures of the Cadell River and Deaf Adder Creek areas which were recorded by Brandl (1973) with the Bradshaw figures of the Kimberley illustrated by Lommel (1959) and Crawford (1968) shows many striking similarities which suggest that it might be useful to think in terms of one style distributed through the two regions.

Wandjina paintings were intimately associated with the traditional religious life of Aborigines in the Kimberley region in recent times. Repainting them was part of the ritual duties of kinship groups who owned the land on which the caves are situated. Non-Aboriginal motifs - sailing ships, a rowing boat, men smoking pipes - are executed in a Wandjina style, and incorporated into local legends (Crawford, 1968: 28-80). Conversely, the Bradshaw figures are of little or no interest to Aboriginal informants (Crawford, 1968: 86).

In the Pilbara, the Kurangara engravings may be associated with a religious cult which emphasises fertility and sexual activities. This cult is known to have spread, apparently from Arnhem Land, into the Kimberley and south to the Pilbara, as well as into the Western Desert, in historic and protohistoric times (Wright, 1968: 49-55). This connection has not been closely explored, because of a dearth of qualified informants, but the
unpatinated state of all the specific Kurangara figures, by contrast with simpler motifs which display a wide range of colour contrast, supports a relatively recent origin.

In the north-west of Australia, therefore, Complex Figurative Styles constitute the most recent rock art movement, and in Arnhem Land and the Kimberley, there has even been a succession of different Complex Figurative Styles. On the east coast, however, Simple Figurative Styles are most recent, and the Complex Figurative mode is absent.

Central and South Australia present an interesting contrast. In these regions the Panaramitee style engravings flourished in remote prehistory. The main emphasis of recent rock art is on cave paintings. These reproduce the motifs found in all contemporary Central Australian art - concentric circles, series of straight and curved parallel lines, dots, other non-figurative motifs, and emu and kangaroo tracks. The resemblance of some cave paintings to modern ground paintings, and to designs engraved on the sacred tjuringa is most striking. See Fig. 6: 20, Mulvaney, 1969: Plate 73, and Spencer and Gillen, 1899: 146-50. Other figurative motifs - simple solid figures of human beings and a limited range of mammals - are found occasionally among the paintings at some sites (Spencer and Gillen, 1912: Plate II), but figurative motifs, apart from tracks, never predominate in the art of the desert. These cave paintings still play an active part in the ceremonial life of Central Australian Aborigines, who repaint the faded designs whenever the relevant ritual is performed at a cave site (Sandall, 1969).

The overlap of motifs between this cave art and the Panaramitee peckings is obvious. However, this does not, in my terms, constitute a continuation of the Panaramitee Style. Technique and form are totally different. The relative proportions of different motifs do not seem to be maintained in the cave art; tracks, although common, are not dominant. Recent poundings are another minor rock art form in this area, but they do not constitute an extension of the Panaramitee Style itself, although some common features are present (see above, p. 189).

Although these bodies of rock art can be divided into several styles by definition of their distinguishing traits, the occurrence of the same basic motifs in both ancient and recent Central Australian art argues for some continuity in the art history of the region. It is of course impossible
to determine whether the cave paintings, sand paintings, illustrations and
other forms of non-figurative decorative art extend back in time.

Traditionally the only change which may have occurred in the execution
of the art of making petrolyph engravings, and the subsequent transfer of

Fig. 6.20. Cave paintings at Rurari, Central Australia.

Photo: R. Edwards.
to determine whether the cave paintings, ground paintings, tjuringa and other items of non-figurative decorative art extend back in time. Theoretically the only change which may have occurred is the extinction of the art of making pecked engravings, and the subsequent transfer of these artifacts to the category of ancestral productions. Anthropologists have commented on the extreme cultural conservatism of the Aborigines inhabiting the desert regions of Central Australia, particularly in the religious sphere, with which their art was chiefly concerned (Berndt, 1958b: 40). If this tendency has persisted through time, it might explain the persistent use of identical motifs in different media, and the virtual failure to expand the range of designs to include more than a few of the simplest figurative motifs which added variety and interest to the rock art styles in two thirds of the peripheral zone of the continent. One wonders occasionally whether the man who carved the Cleland Hills faces was stoned to death for heresy.

There is evidence to suggest that, outside this central area, figurative art did replace the widely distributed Panaramitee Style. At Laura, simple figurative paintings consistently over-lie non-figurative engravings at several cave sites.

A count of motifs at three engraving sites in western New South Wales suggests that, in this area, Panaramitee Style was gradually replaced by a Simple Figurative Style. The sites are Sturts Meadows, Mootwingee and Eurlowie, and they are all located within forty miles of each other, and about 50 miles northeast of Broken Hill.

Sturts Meadows is a classic Panaramitee style site, containing at least several hundred pecked figures with the standard range of motifs. There is the usual small number of lizards, tectiforms, fern-leaf designs and the other motifs which make up Edwards "others" category. Two very simple human figures and one peculiar animal which looks like a very scrawny kangaroo with two spears stuck in it are invariably photographed by visitors, who get bored with the interminable tracks and circles which make up the balance of the figures. All the engravings are completely patinated; they match the surrounding surfaces exactly. The site has never been published in detail, but I visited it in 1971, and took a series of photographs which I consider to give limited but representative coverage. These photos show 97 individual figures, of which 55, or 56.7% are tracks (bird and macropod); 37, or 38.1% are non-figurative; and
5, or 5.2% are figurative (other than tracks).

Mootwingee is well-known for its many figurative motifs of men holding spears, clubs, and boomerangs, women, and emus, kangaroos and other mammals (McCarthy and Macintosh, 1962). But kangaroo and emu tracks are scattered profusely among these figures, and although circles are comparatively rare, other non-figurative motifs such as groups of dots and crescents are very common. All these figures consist of solid forms, bands and thick outlines, deeply and precisely pecked into the hard sandstone surface of the main site, a sloping expanse of rock near a chain of waterholes in the bed of a creek. They are completely patinated, and the massive rock slabs of which the slope is composed have undergone extensive cracking and exfoliation since the carvings were made.

Macintosh derived some information about Mootwingee from an Aboriginal man, Mr. George Dutton, who had visited the site as a boy, and had been instructed in some of the legends relating to it (McCarthy and Macintosh, 1962: 274-7). His interpretations of specific figures, however, were based on his general background knowledge of the appropriate myth cycles, rather than being precise identifications of particularised significance. Only one ceremony took place at the site in his lifetime, although other sites in the area were patronised more often, and he gave the impression that Mootwingee had been falling into disuse in the generation previous to his own.

Asked why the sites had fallen into disuse, he said simply that the people had gone, they were not so many, they became fewer, there weren't enough for gatherings and they moved away. In other words, Mootwingee was entering the realms of Aboriginal prehistory even before European intrusion.

Dutton has absolutely no knowledge of how the engravings were made, nor had his step-father, nor his father in turn. He thinks it could have been before the dark people, and said no one could make them in this hard rock and if the dark people did make them, perhaps it was in mud, before it got hard like rock.

His information strongly supports the opinion, derived from hypothetical calculations in the description of Dingo Rock, that engravings ceased at Mootwingee long before the white man's arrival. (McCarthy and Macintosh, 1962: 276)

See page 17, for a summary of the calculations used by Macintosh to arrive at a hypothetical age of 550 - 300 B.P. (minimum) to 2250 - 1000 B.P. (maximum) for these engravings.
In 1971, I undertook a count of motifs on the main rock slope at Mootwingee, assisted by students from the Workers' Educational Association. The results were as follows:

Table 6:2

<table>
<thead>
<tr>
<th>Motif</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macropod tracks</td>
<td>218</td>
<td>20.3</td>
</tr>
<tr>
<td>Bird tracks</td>
<td>216</td>
<td>20.1</td>
</tr>
<tr>
<td>Human footprints</td>
<td>7</td>
<td>0.7</td>
</tr>
<tr>
<td>Circles</td>
<td>33</td>
<td>3.1</td>
</tr>
<tr>
<td>Groups of dots</td>
<td>152</td>
<td>14.1</td>
</tr>
<tr>
<td>Crescents</td>
<td>108</td>
<td>10.0</td>
</tr>
<tr>
<td>Other non-figurative</td>
<td>125</td>
<td>11.6</td>
</tr>
<tr>
<td>Human figures</td>
<td>80</td>
<td>7.4</td>
</tr>
<tr>
<td>Kangaroos</td>
<td>7</td>
<td>0.7</td>
</tr>
<tr>
<td>Emus</td>
<td>16</td>
<td>1.5</td>
</tr>
<tr>
<td>Other animals</td>
<td>31</td>
<td>2.9</td>
</tr>
<tr>
<td>Weapons</td>
<td>83</td>
<td>7.7</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>1076</td>
<td><strong>100.1</strong></td>
</tr>
</tbody>
</table>

In summary, tracks comprise 41.1%, non-figurative motifs 38.8%, and figurative motifs 20.2%.

Euriowie is quite a different kettle of rock engravings. The technique at this site is pounding, and the figures, which are unpatinated, stand out clearly against the dark, vertical rock walls of a narrow gorge. They include a wide variety of human figures, birds in flight, an emu with several chicks, snakes, and other animals. Non-figurative motifs such as concentric circles are present, but tracks are very rare. Dutton was much more familiar with Euriowie than with Mootwingee, as he had attended several ceremonies there, and he had precise and specific explanations for motifs at this site (McCarthy and Macintosh, 1962: 275). The actual proportions of motifs at Euriowie, taken from a fairly comprehensive photographic coverage of the site are tracks, 3.5%, non-figurative 34.2%, and figurative 62.3% (based on a sample of 93 figures).

The relative proportions of motifs in the main categories at these three sites can be summarised in the diagram Fig. 6:21.
Fig. 6.21. Relative proportions of motif categories at Sturts Meadows, Mootwingee and Euriowie. (Numbers indicate percentage of figures at site in each motif category.)
Sturts Meadows' affiliations with the Panaramitee Style suggest (without absolutely demonstrating) an age in excess of several thousand years. This is supported by their completely patinated state. On the other hand, several features of the Euriowie engravings suggest that they may be comparatively recent (pounded as opposed to pecked (Mountford, 1955 and above, p. 186), unpatinated, apparently relevant to recent traditional culture). On a basis of motifs, apart from any other consideration, Mootwingee seems to be intermediate to Sturts Meadows and Euriowie. I therefore propose that, during an indefinite but lengthy period, in which the focus of artistic attention in this area shifted from Sturts Meadows to Mootwingee to Euriowie, the predominant motifs also changed, from tracks to figurative, with non-figurative designs as an almost constant factor, producing the seriation shown in Fig. 6: 21. In other words, Panaramitee Style followed (gradually) by a Simple Figurative Style.

On the other hand, there is some evidence that Simple Figurative Styles may have preceded Complex Figurative ones in the northwest of Australia. Unfortunately, no one has ever presented any detailed data about the superimposition sequences in Arnhem Land cave art, possibly because the replacement of Mimi by X-ray is so clear cut that quantitative analysis would be superfluous. Published comments about the earlier phases of the sequence seem preliminary and impressionistic.

McCarthy, in the process of describing basic naturalistic art throughout Australia, and following descriptions of this style in the Sydney area, near Cobar and at Laura, says:

This zoomorphic art is dominant again in the early phase of painting found in the numerous rock shelters of Arnhem Land and its offshore islands. It is part of a widespread mantle of large and colourful paintings of the animals upon which the people lived ......

The cave art of Arnhem Land did not stagnate, ... changes did take place ... the basic naturalistic art was abandoned quite abruptly: there is an intrusion (of unknown origin) of a great variety of paintings relating to malignant and beneficent spirits... (McCarthy, 1964: 39-40)

He then goes on to describe the later phases of Mimi and X-ray art.

Agnes Schulz, in Felsbilder in Nord-Australien pays a little more attention to this early phase, which she distinguishes from X-ray and Mimi:
Among the paintings older than the X-ray pictures there are also other types of anthropoid figures, which are neither stick figures nor expressively moving ones.

Several rocks, on which no X-ray animals occur, show another, apparently earlier style of animal painting, e.g. the fishes on plate 35b and the kangaroos on plate 35a ... four large anthropoid figures on plates 36 and 37. They belong to the first in a sequence of layers of animals and figures, and apart from the old technique, also the lively mode of representation marks them to be closer to the few old animal pictures than to the other anthropoid figures. (Schulz, 1971: 101-3)

She also refers to several paintings of birds as belonging to this early phase. Examination of the plates referred to shows that all these motifs are simple naturalistic portrayals, with none of the complex features found in the later styles.

Brandl also distinguishes simple paintings of animals which do not have any X-ray features, although he associates many of them with his "Early Mimi" phase, without presenting definitive evidence for doing so. He does, however assign at least some of them to the earliest phase of cave art in Arnhem Land, previous to Mimi:

Phase 1 comprises the oldest preserved paintings in the Cadell River area. They are crudely painted designs in heavy dark red or faded lines, or outlines with dotted or irregularly filled in interior. Examples of this style are Figures 44, 45, 188, 193, 197 (bottom), and 225. Most of these paintings are poorly preserved and partially obliterated (e.g. Plate XLII).... Similar crudely painted animals (Fig. 126) occasionally measuring a few metres in length, and large anthropomorphic figures are the oldest preserved rock paintings at Deaf Adder Creek. They precede the typology in Figure 72 (which represents the development of Mimi and X-ray styles - L.M.). (Brandl, 1973: 183)

The figures referred to are all simple figurative motifs, including birds, mammals, fish, reptiles and some crude human figures. I suspect, however, that many similar motifs have been assimilated to the Mimi style by Brandl without justification except that they are in the same colour (red).

The overall uniformity of the complex termed Mimi art is emphasised by the pigment used and the 'perspective' employed in the designs. ... Overlays are infrequent. (Brandl, 1973: 16)
reminiscent (by virtue of being un-striking) of simple figurative human figures in other bodies of cave art throughout Australia - e.g. Brandl's Figs. 184, 199, 204-11, 221-3, 228-30. I am therefore inclined to accept the verdict of McCarthy and Schulz, that there is a simple figurative style in Arnhem Land which is older than the Mimis.

Over on Groote Eylandt, there are thousands of cave paintings in an exclusively Simple Figurative style. Mimi and X-ray are absent, although this art was practised in fairly recent times; it includes representations of metal axes and Macassan *praus* (McCarthy, 1960).

Not all the painted figures in the Kimberley caves conform to the Wandjina and Bradshaw styles; the photographs in Crawford's *The Art of the Wandjina* show a number of simpler human and animal figures residing on the cave walls - e.g. Figs. 3, 8, 89, 91-3, 98-100, 104-5. Crawford does not, however, distinguish these from the more complex motifs on stylistic grounds, and he makes no comment about any sequence other than Wandjina-over-Bradshaw.

Nor is there as yet any strong evidence for a sequence of styles in the Pilbara region, although both Simple and Complex Figurative are present. Wright says:

> I certainly have subjective impressions about the sequence of techniques and treatment at many sites throughout the region ... In the Upper Yule, for example, I am quite confident that the abraded outline phase came first and the conventionalized Kurangara figures are more recent...

Superimpositions at other sites were quite rare, most motifs being fairly naturalistic representations of humans and animals with an all-over treatment. The stick figures of Gregory Gorge (figs. 731 and 736) and Cooya Pooya (Figs. 745 and 817) are notable exceptions to naturalistic proportions, but the sharp colour contrast of these figures makes me think that this style could be as recent as the Kurangara art and should not be identified with an earlier linear phase of engraving. I recall my previous reservations about the unreliability of colour contrast even at one site, but as I have just mentioned, I am at present giving subjective impressions about sequences. (Wright, 1968: 67-8)

On the whole, the sequence of Complex-Figurative-folllows-Simple-Figurative is less well established than that of Simple-Figurative-folllows-Panaramitee-Style. It would be best, therefore, to regard the net implication of the preceding discussion of styles in the northwest as a hypothesis of the art history of this region.
This hypothesis is materialised on the wall of the Lightning Brothers site at Delamere in the Northern Territory. In Fig. 6: 22, two large human figures in a complex figurative style dominate a variety of simple figurative motifs and an engraved assemblage of bird and macropod tracks, circles and abraded grooves. In the original print of Edward’s photograph, these motifs seem to be superimposed on each other in a sequence corresponding to the one outlined above but as I have criticised McCarthy for inferring superimposition from photographs (p. 61), I shall reserve judgement for a future field trip.

Table 6:3 comprises a list of 100 selected rock art sites grouped according to the three major stylistic units which have been described above, plus four other sites where miscellaneous styles occur, whose status is discussed below, pages 239-241. This table accompanies Fig. 6: 23, which is a map of Australia marked with the locations of the same 104 sites, coded according to style.

Up to this point, I have been assembling diverse information about the styles, distribution, and relative and absolute age of some of Australia's rock art. It has been freely implied that the occurrence of these factors forms a pattern in time and space. The evidence for this pattern is of variable quality; some is direct and factual - at site X, style A follows style B. More is circumstantial, selective, based upon a chain of supposition, or upon inadequate data. But the current state of research in this field in Australia hardly allows a more polished argument. Huge gaps exist, which can only be filled by an accumulation of basic information about the distribution of sites and styles, and more absolute dates for the common styles. But, as these conditions are unlikely to be fulfilled for some time, I have marshalled the available evidence towards a modest end. To wit, a proposed sequence of some of the styles and groups of related styles which have been fashionable in rock art at different times and different places within Australia.

Style Sequences Proposed by Lommel and McCarthy.

It might be argued that, if the evidence is poor, a synthesis of it should not be attempted. But other writers have not been deterred. Lommel, in a recent article called "Changes in Australian Art" in an anthology on Aboriginal culture, Diprotodon to Detribalization, (1970) has advanced
Fig 6.22. The Lightning Brothers site near Delamere, Northern Territory, includes simple and complex figurative paintings, engravings of bird and macropod tracks (on the lower third of the cave wall) and abraded grooves (on the tilted slab, left).

Photo: R. Edwards.
Table 6:3

Some major Australian rock art sites, divided according to style, with their location and most important reference.

Numbers refer to map in Fig. 6:23.

Abbreviations

| NT | Northern Territory |
| SA | South Australia |
| Q  | Queensland |
| NSW | New South Wales |
| V  | Victoria |
| T  | Tasmania |
| P  | Pilbara Region |
| K  | Kimberley Region |
| AL | Arnhem Land |
| GE | Groote Eylandt |
| L  | Laura |
| CA | Central Australia |

<table>
<thead>
<tr>
<th>No.</th>
<th>Site</th>
<th>Location</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Tiverton</td>
<td>SA</td>
<td>Edwards, 1965b.</td>
</tr>
<tr>
<td>8</td>
<td>Balparana</td>
<td>SA</td>
<td>Basedow, 1914.</td>
</tr>
<tr>
<td>9</td>
<td>Wilkindinna</td>
<td>SA</td>
<td>Basedow, 1914.</td>
</tr>
<tr>
<td>10</td>
<td>Owieandana</td>
<td>SA</td>
<td>Hale and Tindale, 1925.</td>
</tr>
<tr>
<td>11</td>
<td>Oratunga</td>
<td>SA</td>
<td>Basedow, 1914.</td>
</tr>
<tr>
<td>12</td>
<td>Cleland Hills</td>
<td>CA</td>
<td>Edwards, 1968.</td>
</tr>
<tr>
<td>16</td>
<td>Yarbiri</td>
<td>CA</td>
<td>Edwards, 1970.</td>
</tr>
</tbody>
</table>
### Table 6.3 (cont.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Site</th>
<th>Location</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Ooramina</td>
<td>CA</td>
<td>Edwards, 1971.</td>
</tr>
<tr>
<td>20</td>
<td>Sturts Meadows</td>
<td>NSW</td>
<td>Black, 1943.</td>
</tr>
<tr>
<td>21</td>
<td>Laura River</td>
<td>L</td>
<td>Woolston and Trezise, 1969.</td>
</tr>
<tr>
<td>22</td>
<td>St. George River</td>
<td>L</td>
<td>Woolston and Trezise, 1969.</td>
</tr>
<tr>
<td>23</td>
<td>Mt. Cameron West</td>
<td>T</td>
<td>Meston, 1932.</td>
</tr>
<tr>
<td>24</td>
<td>Devonport</td>
<td>T</td>
<td>Meston, 1931.</td>
</tr>
<tr>
<td>25</td>
<td>Einasleigh</td>
<td>Q</td>
<td>Edwards (Ron), 1967.</td>
</tr>
<tr>
<td>26</td>
<td>Dajarra</td>
<td>Q</td>
<td>Creer, 1970.</td>
</tr>
<tr>
<td>28</td>
<td>Torrens Creek</td>
<td>Q</td>
<td>Wilkins, 1928.</td>
</tr>
<tr>
<td>29</td>
<td>Burnett River</td>
<td>Q</td>
<td>Mathews, 1910.</td>
</tr>
<tr>
<td>30</td>
<td>Pigeon Creek</td>
<td>Q</td>
<td>Tryon, 1884.</td>
</tr>
<tr>
<td>32</td>
<td>Narrabri</td>
<td>NSW</td>
<td>(personal knowledge)</td>
</tr>
<tr>
<td>33</td>
<td>Bell's Line of Road</td>
<td>NSW</td>
<td>(personal knowledge)</td>
</tr>
<tr>
<td>34</td>
<td>Barren Ground</td>
<td>NSW</td>
<td>(personal knowledge)</td>
</tr>
</tbody>
</table>

### Simple Figurative Styles

<table>
<thead>
<tr>
<th>No.</th>
<th>Style</th>
<th>Location</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Site</td>
<td>Location</td>
<td>Reference</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------</td>
<td>----------</td>
<td>--------------------</td>
</tr>
<tr>
<td>38</td>
<td>Buriowie</td>
<td>NSW</td>
<td>Black, 1943.</td>
</tr>
<tr>
<td>39</td>
<td>Mt. Gunderbooka</td>
<td>NSW</td>
<td>Black, 1943.</td>
</tr>
<tr>
<td>40</td>
<td>Iona</td>
<td>NSW</td>
<td>Quick, 1962.</td>
</tr>
<tr>
<td>41</td>
<td>Wuttagoona</td>
<td>NSW</td>
<td>Black, 1943.</td>
</tr>
<tr>
<td>43</td>
<td>Moonbi</td>
<td>NSW</td>
<td>McBryde, 1964b.</td>
</tr>
<tr>
<td>44</td>
<td>Clarence Valley (several</td>
<td>NSW</td>
<td>(personal knowledge)</td>
</tr>
<tr>
<td></td>
<td>cave drawing sites)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Crocodile Gallery</td>
<td>L</td>
<td>Trezise, 1971b.</td>
</tr>
<tr>
<td>46</td>
<td>Pig Gallery</td>
<td>L</td>
<td>Trezise, 1971b.</td>
</tr>
<tr>
<td>47</td>
<td>Mushroom Rock</td>
<td>L</td>
<td>Trezise, 1971b.</td>
</tr>
<tr>
<td>48</td>
<td>Gugu-Yalinji Main Camp</td>
<td>L</td>
<td>Trezise, 1971b.</td>
</tr>
<tr>
<td>51</td>
<td>Chasm Island</td>
<td>GE</td>
<td>McCarthy, 1960.</td>
</tr>
<tr>
<td>53</td>
<td>Prudhoe Island</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>57</td>
<td>Linesman Creek</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>58</td>
<td>Port Hedland</td>
<td>P</td>
<td>McCarthy, 1962.</td>
</tr>
<tr>
<td>59</td>
<td>Depuch Island</td>
<td>P</td>
<td>McCarthy, 1961.</td>
</tr>
</tbody>
</table>
### Table 6:3 (cont.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Site</th>
<th>Location</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>Cooya Pooya</td>
<td>P</td>
<td>Wright, 1968.</td>
</tr>
<tr>
<td>61</td>
<td>Dampier</td>
<td>P</td>
<td>Comalco, Ltd., 1972.</td>
</tr>
<tr>
<td>62</td>
<td>Chiratta</td>
<td>P</td>
<td>Wright, 1968.</td>
</tr>
<tr>
<td>63</td>
<td>Gregory Gorge</td>
<td>P</td>
<td>Wright, 1968.</td>
</tr>
<tr>
<td>64</td>
<td>Pirina</td>
<td>P</td>
<td>Wright, 1968.</td>
</tr>
<tr>
<td></td>
<td><strong>Complex Figurative Styles</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>Unbalanja</td>
<td>AL</td>
<td>Mountford, 1956.</td>
</tr>
<tr>
<td>66</td>
<td>Inagurdurwil</td>
<td>AL</td>
<td>Mountford, 1956.</td>
</tr>
<tr>
<td>68</td>
<td>Obiri</td>
<td>AL</td>
<td>Mountford, 1956.</td>
</tr>
<tr>
<td>70</td>
<td>Kalumburu</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>71</td>
<td>Chalangdal</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>72</td>
<td>Warabi</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>73</td>
<td>Bigge Island</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>74</td>
<td>Langgi</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>75</td>
<td>Glenelg River</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>76</td>
<td>Doubtful Bay</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>77</td>
<td>Manning Creek</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>78</td>
<td>Mt. Barnett Station</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>79</td>
<td>Gibb River Station</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>80</td>
<td>Wanalirri</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>81</td>
<td>Mamadai</td>
<td>K</td>
<td>Crawford, 1968.</td>
</tr>
<tr>
<td>No.</td>
<td>Site</td>
<td>Location</td>
<td>Reference</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------</td>
<td>----------</td>
<td>--------------------------</td>
</tr>
<tr>
<td></td>
<td><strong>Panaramitee Style and Simple Figurative Style</strong> both present at site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>Quinkan Gallery</td>
<td>L</td>
<td>Trezise, 1971b.</td>
</tr>
<tr>
<td>83</td>
<td>Giant Horse Gallery</td>
<td>L</td>
<td>Trezise, 1971b.</td>
</tr>
<tr>
<td>84</td>
<td>Split Rock Gallery</td>
<td>L</td>
<td>Trezise, 1971b.</td>
</tr>
<tr>
<td>85</td>
<td>Emu Gallery</td>
<td>L</td>
<td>Trezise, 1971b.</td>
</tr>
<tr>
<td>86</td>
<td>Deighton River</td>
<td>L</td>
<td>Trezise, 1971a.</td>
</tr>
<tr>
<td></td>
<td><strong>Simple Figurative and Complex Figurative Styles</strong> both present at site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>89</td>
<td>Bolungbim</td>
<td>AL</td>
<td>Maddock, 1970.</td>
</tr>
<tr>
<td>90</td>
<td>Deaf Adder Creek</td>
<td>AL</td>
<td>Brandl, 1973.</td>
</tr>
<tr>
<td>91</td>
<td>Sickness Cave</td>
<td>AL</td>
<td>Arndt, 1962b.</td>
</tr>
<tr>
<td>92</td>
<td>Delamere</td>
<td>NT</td>
<td>Arndt, 1962a.</td>
</tr>
<tr>
<td>93</td>
<td>Sherlock Station</td>
<td>P</td>
<td>Wright, 1968.</td>
</tr>
<tr>
<td>94</td>
<td>Upper Yule River (several sites)</td>
<td>P</td>
<td>Wright, 1968.</td>
</tr>
<tr>
<td>95</td>
<td>Nunnyerry Creek</td>
<td>P</td>
<td>Wright, 1968.</td>
</tr>
<tr>
<td>96</td>
<td>Hooley Station</td>
<td>P</td>
<td>Wright, 1968.</td>
</tr>
<tr>
<td>98</td>
<td>Hammersley</td>
<td>P</td>
<td>Wright, 1968.</td>
</tr>
</tbody>
</table>
Table 6:3 (cont.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Site</th>
<th>Location</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Ingaladdi</td>
<td>NT</td>
<td>Mulvaney, 1969.</td>
</tr>
</tbody>
</table>

Penaramitee Style, Simple and Complex Figurative Styles all present at site

<table>
<thead>
<tr>
<th>No.</th>
<th>Site</th>
<th>Location</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Carnarvon Range (numerous sites)</td>
<td>Q</td>
<td>Goddard, 1941.</td>
</tr>
<tr>
<td>102</td>
<td>Devon Downs</td>
<td>SA</td>
<td>Hale and Tindale, 1930.</td>
</tr>
<tr>
<td>104</td>
<td>Clarence Valley engravings</td>
<td>NSW</td>
<td>McBryde, 1964a.</td>
</tr>
</tbody>
</table>
Fig. 6:23. The distribution of major Australian rock art sites and styles. (Numbers refer to Table 6:3)
a theory of Australian art history involving six successive rock art styles, which have arrived in Australia from the north.

These are, in order:

1. "a linear style" (Lommel, 1970: 218) including mazes, concentric circles and spirals. Examples are Devon Downs and other sites in the centre of the continent (presumably Panaramitee, etc.).
2. "elegant little animated anthropomorphic figures which are painted on the rocks in dark red" (219). These are the Mimi and Bradshaw styles, found in the Kimberley and Arnhem Land.
3. "the so-called Wondschina style" (219), found only in the Kimberley.
4. "Animal Style" (221), Kimberley, Arnhem Land (including X-ray motifs).
5. "the painted or engraved Hocker" (224) (a specific type of elongated human figure with bent arms and legs). Found in central Western Australia (presumably the Pilbara region), the Kimberley, Arnhem Land and in southeastern Australia.
6. "The last phase of Australian rock art consists of crude anthropomorphic figures. They may be engraved or painted." (227) Found in the Kimberley, Arnhem Land, and in western N.S.W. (illustration of cave paintings at Iona).

The arguments used in support of this sequence of styles revert to concepts which culture historians now abhor. For example, the Wandjina style is said to be "degenerated" from the earlier Bradshaw style because the former is clumsy and the latter is elegant (230 and 234). Diffusionism on a world scale is invoked to explain the "animal style", which is associated with spearthrowers and the European Mesolithic hunters' concept of the "Lord of Animals" (221). The subsequent Hocker figures are linked with the Neolithic Revolution and plant cultivation in other parts of the world, but in Australia, when the motif arrived, the Aborigines failed to understand its useful associations (224-5). The last phase of crude anthropomorphism constitutes:
... remnants of Aboriginal mythology now misinterpreted by some misunderstood features of Christianity picked up on occasional visits to mission stations. (228)

In conclusion Lammel states:

... one fact, however, emerges clearly: the dominant role of foreign influence on Australian rock art. ... The typical Australian characteristic seems to be the incapability to change and to assimilate. The Australian culture is the culture of nomadic hunters. The Weltanschauung of these hunters is fully expressed by the totemic ceremonies and again by the mazes engraved on rock in southwestern and in central Australia. This Weltanschauung is not changed by additional art styles which only serve to accentuate it. Elements of the animated anthropomorphic style, the naturalist animal style, the Wondschina style in itself, certainly derived from cultures which belong to plant cultivators, and are used only to elaborate the hunter philosophy of Australian Aboriginals, not to change their outlook. If any element of the plant cultivators came too closely to Australian Aboriginals to be neglected, it was misinterpreted and misunderstood, so as to avoid the necessity of assimilating it, as is.

The Wondschina style in itself is an example of misinterpretation. All the elements of this cult point clearly towards a plant-cultivating conception of the world, but in Australia, this is changed and fitted into the hunter's philosophy. The Hockers are the special expression of a plant cultivator's conception. They mean a fertility cult, and they are, in Southeast Asia, linked with cannibalism, headhunting, and special fertility rites. The Hocker and plant cultivator's concepts must have touched the northwestern shore of Australia. But only a faint notion of the fertility idea has been accepted there. The Hockers have some sort of sexual or even orgiastic meaning in the North-West, but the main nucleus of the idea has somehow escaped the Australian mind.

As far as change is visible in Australian art, its main feature is a progressive degeneration....

So, if the change in art in Australia does not demonstrate a change in the ways of the Aboriginals or in their social organization, it certainly expresses a decline in elegance, a decline in the atmosphere of life. (232-4)

These arguments do not require detailed refutation.*

* But is is disturbing to find them in a recent publication which was offered at discount to Mary Martin's postal customers. Respect for Aboriginal culture is growing slowly, but there are still many people who, through ignorance or prejudice, believe that the Aborigines were primitive savages whose culture was simple in every respect as their technology undoubtedly was. Aboriginal art is one aspect of the traditional culture which has generally been admired and valued; it would be unfortunate if Lommel's ideas, appearing in an anthology which is directed at the non-specialist, should ever confirm some reader's prejudices.
McCarthy has also postulated a sequence of changes in Australian rock art, based on successive techniques of rock engraving. I have explained his theory and my objections to it, in Chapter 2. It has been widely propagated in academic and popular works, in which it is expressed as established fact (e.g. McCarthy, 1962: 48-51; 1964: 33-43; 1965: 85; 1967: 14-32). Moreover, McCarthy has sufficient confidence in his sequence to use it to "disprove" other writers' assertions.

The explanation of the conflicting views expressed above (that large animal and bird tracks found in the Manunda-Yunta area represent those of the extinct megafauna; see also p.189 - L.M.) lies in the discovery of four phases of rock engraving in Australia by the author's study of superimpositions at Depuch, Port Hedland, upper Yule River, Flinders Ranges, and western New South Wales, in galleries several thousands of miles apart. Throughout this vast region the phases of abraded grooves, outlines (extending into interior line design styles), linear and geometric designs, and pecked intaglios in several sub-phases, followed one another in that order wherever these techniques occur. Most of them are thus prehistoric techniques although the Linear-geometric phase survived as a ritual art in central Australia, and for this reason some galleries of this kind may be interpreted by living natives. The pecked intaglios everywhere are the most recently practised method of rock engraving, and for this reason it is impossible to argue that the huge pecked tracks at Pimba are, according to Mr. N.B. Tindale, those of the extinct Genyornis, or at Yunta, according to Dr. H. Basedow, those of a Diprotodon. These tracks were pecked into the rocks in the latest phase of rock engraving, long after these giant animals became extinct. (McCarthy, 1967: 31)

McCarthy's theory has been widely quoted (e.g. Baglin and Mullins, 1971: 8-11). I have pointed out (pages 58-70), that it is based on a continent-wide extension of superimposition sequences postulated to exist at Port Hedland, and made a detailed criticism of superimposition as a method of relative dating and of his categorisation of Port Hedland motifs into styles according to technique.

I feel that to focus on specific motifs (like Lommel) or on techniques (like McCarthy) is too narrow an approach. My proposed history of Australian rock art is broadly based on styles as a whole, their distribution and evidence for relative age. Following is a summary of what this evidence has led me to believe happened in Australia.
Some time before 10,000 B.P., the people living in most of the continent, including Tasmania which was then attached to the mainland, made rock engravings by the pecking technique. The range of motifs was very limited, consisting almost entirely of a small number of simple non-figurative designs and representations of the tracks of animals (mainly macropods) and birds. Lizards dominated the very few figurative motifs which were produced. Throughout a large tract of Central and South Australia some factor operated upon these artists to keep the relative proportions of different motifs engraved at each site very constant. In other areas - for example northeastern Queensland and Tasmania - the relative percentages of motifs were not maintained, but the range of motifs, and their technique, form and size were identical. This phase of rock art probably persisted for a very long time, although it is impossible to say whether it was contemporaneous throughout its enormous distribution. It could easily have died out in some areas while still spreading into others. In the Northern Territory, at least, it was associated with the early phase of stone implement making, in which large flakes and cores with steeply retouched edges predominated.

At some stage, the inhabitants of Central Australia stopped making pecked engravings, and the memory of their manufacture receded into the realms of the ancestors. Their fondness for the tracks and non-figurative motifs found in the Panaramitee Style continued into the present day, and they are still reproducing them in cave paintings, ground drawings and decorative art, with only subtle changes to suit each medium. It is of course impossible to say whether these various arts have replaced that of rock engraving, or whether the history of these more perishable items extends as far back into antiquity. Recent pounded engravings display the same old motifs, plus representations of modern European artifacts.

Around the northwestern, northern and eastern peripheries of the continent, however, the Panaramitee Style was succeeded by others which emphasised a different convention of representing objects - simplified silhouettes of their frontal or profile aspects. The date of the beginning of this Simple Figurative art is as yet unknown. It is not my present business to investigate whether this new fashion sprang up within Australia, or entered from somewhere outside, or even to decide which of
these two possibilities is the more likely. It does seem unlikely that it evolved spontaneously in each region in which it is manifested - Sydney inventing figurative outline engravings: Cobar, Groote Eylandt and Laura each inventing figurative cave paintings, and so on. I assume, therefore, that it entered or was created at some point on the periphery of the continent, and spread into inland N.S.W.

Simple Figurative Styles are much more variable than the Panaramitee Style, as they include engravings, paintings and drawings with a wide range of forms, decorative treatments and sizes. Lack of character is the constant factor. I have a feeling (as yet untested) that technique, and also the form and size of the motifs may have varied according to the available rock surfaces. Large outline engravings occur on opposite sides of the continent on flat horizontal expanses of soft Hawkesbury sandstone and Port Hedland limestone; small solid figures on the vertical faces of hard granite boulders in the Pilbara region and on the schist walls of the gorge at Euriowie. The very spacious caves which develop in the soft sandstone near Laura and in the Sydney region contain large scale paintings and drawings respectively; the generally smaller shelters in hard sandstone in the Cobar area display diminutive painted figures. Nevertheless, the underlying homogeneity of all these simple motifs is a definite and constant feature of this art.

There is some evidence to suggest that the replacement of the Panaramitee Style by Simple Figurative Styles was a gradual process. In fact, all Simple Figurative Styles retain tracks and non-figurative motifs as minor elements. Extending the results of the comparison of these motif categories at three sites in western N.S.W. produces an interesting continuum.
Table 6:4 Relative proportions of motifs at various sites and regions throughout Australia. Percentages are given as whole numbers to facilitate comparison.

<table>
<thead>
<tr>
<th>Sites</th>
<th>Engravings or Paintings</th>
<th>Reference</th>
<th>Tracks %</th>
<th>Non-Figurative %</th>
<th>Other Figurative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>South and Central Australia</td>
<td>E</td>
<td>Edwards, 1966a</td>
<td>66</td>
<td>33</td>
<td>1</td>
</tr>
<tr>
<td>Sturts Meadows</td>
<td>E</td>
<td>See p.216</td>
<td>57</td>
<td>38</td>
<td>5</td>
</tr>
<tr>
<td>Laura</td>
<td>E</td>
<td>Woolston/Trezise</td>
<td>51</td>
<td>41</td>
<td>8</td>
</tr>
<tr>
<td>Mootwingee</td>
<td>E</td>
<td>See p.218</td>
<td>41</td>
<td>39</td>
<td>20</td>
</tr>
<tr>
<td>Pilbara</td>
<td>E</td>
<td>Wright, 1968</td>
<td>27</td>
<td>19</td>
<td>54</td>
</tr>
<tr>
<td>Sydney</td>
<td>E</td>
<td>McMahan, 1965</td>
<td>20</td>
<td>23</td>
<td>58</td>
</tr>
<tr>
<td>Eurilowie</td>
<td>E</td>
<td>See p.218</td>
<td>4</td>
<td>34</td>
<td>61</td>
</tr>
<tr>
<td>Laura</td>
<td>P</td>
<td>See p.152</td>
<td>3</td>
<td>16</td>
<td>81</td>
</tr>
<tr>
<td>Groote Eylandt</td>
<td>P</td>
<td>McCarthy, 1960</td>
<td>3</td>
<td>14</td>
<td>83</td>
</tr>
</tbody>
</table>

This situation parallels that of stone tool industries in Australia, which have large, steeply retouched flakes and cores continuing into the later phases, but without dominating them as they do the earlier assemblages.

On the east coast, in Groote Eylandt, and probably also in parts of the Pilbara and in western N.S.W., Simple Figurative Styles persisted until the present. In the northwest of the continent, however, the Simple Figurative mode was eventually replaced by a dazzling variety of Complex Figurative Styles. Artists in this region discovered (or copied) stick-figures, action poses, the X-ray convention, body contours, profile depiction of human figures, complex stereotypes (Wandjinjas and Kurangaras) exaggerated sexual themes, intricate decorative treatments and other complex variations on figurative representation. It is as yet unknown how long ago this transition took place, but the period must be sufficient to allow for a further stylistic change within it, because of the replacement of Mimi by X-ray in Arnhem Land, and Bradshaw figures by Wandjinjas in the Kimberley.

It is hard to say how all these very different styles relate to each other. They are so diverse that it is difficult to see how they could have
developed from each other, or even as the result of some common factor. Yet the fact remains that they are all clustered in one relatively small part of the continent, and they all represent considerable departures from the Simple Figurative norm. Lommel and McCarthy both point to external stimulus, because of the area’s proximity to different cultures and its record of visitation by non-Aboriginal peoples. If this is the explanation for the enrichment of rock art styles, then Groote Eylandt and Cape York must have remained immune to this influence. I have not researched in detail the art of Indonesia and New Guinea, but if the source of the Complex Figurative styles in northwestern Australian rock art lies in these regions, it is not obvious in a superficial comparison.

It may be, however, that the concept of stimulus is more appropriate than that of actual diffusion of motifs from one region to another. The Aboriginal peoples of this area had at the time of European contact a richer and more varied assemblage of material culture than any other group in Australia, and their repertoire of decorative art and objects d'art was similarly large and illustrious. Two explanations have been advanced for this state of affairs; one is contact with Indonesian trepang gatherers, and the other is the natural abundance of foodstuffs in the tropical coastal environment, which diminished the length of time that a local hunter-gatherer needed for filling his or her stomach, thus leaving more time for the production of a greater variety of useful and ceremonial impedimenta (Berndt and Berndt, 1954: 38). Some borrowings from the Indonesian visitors made obvious additions to the indigenous equipment - outrigger canoes, pipes and tobacco, metal axes and spearheads. But it is also true that the Aborigines conscientiously ignored other foreign cultural elements - for example, the cultivation of plants.

Fundamentally, though, the extreme diversity of material culture results from a proliferation of variations on basic Australian artifacts. The prototypes of northwestern hunting and fishing equipment, bags and containers, ceremonial and mortuary regalia and body decorations, etc. are to be found throughout the continent, and they constitute the basic equipment of most Aboriginal groups. In the northwest, however, highly specialised variations of these items have been developed, and often combined with a wealth of decorative treatment to produce an impression of cultural richness. This may have happened as a result of external stimulus, or because of increased available time, or a combination of both.
But it is unlikely that this process involved a direct infusion of foreign traits - you don't get the idea for a new type of hunting weapon from a visiting agriculturalist, but by extending some aspect of the hunting weapons you already have. It may be that the abundance and variety of the later cave painting styles developed out of local Simple Figurative art by a process parallel to the proliferation of variations on indigenous types of material culture.

Throughout Australia, the end product of these changes in rock art was a pattern of considerable regional diversity among the most recent styles, in contrast to the uniformity of the ancient Panaramitee Style. Again, this situation parallels that of Australia's prehistoric stone tool industries - the wide and homogeneous distribution of the generalised early assemblages contrasting with the more regionalised distribution of later specialised types. It would be foolish to imply, at this stage, that a historical connection existed between specific styles and stone industries (except at Ingaladdi), but the similarity in the tendency toward specialisation and regionalisation may suggest the operation of similar cultural processes.

Miscellaneous Styles.

Certain important sites, styles, and even whole rock art areas have not been alluded to in the foregoing account. They do not, in fact, fit into the sequence which I have postulated. This does not mean that the sequence is wrong, but merely that it is not comprehensive. Ergo, I do not claim that is is.

For example, the finger markings in Koonalda cave, although they are currently the oldest dated art in Australia, cannot be usefully incorporated into any stylistic sequence, because their form is extremely simple and possibly related to the special conditions of the cave walls, and because they occur at only one site. Abraded grooves, on the other hand, are found at many locations, sometimes in association with a wide variety of other rock art - finger marking at Koonalda, Panaramitee Style engravings at Nackara Springs, Complex Figurative paintings at Delamere. They are 20,000 years old at Koonalda (Maynard and Edwards, 1971), 7000 at Ingaladdi (Mulvaney, 1975: Plate 59), 4000 at Devon Downs (Hale and Tindale, 1930: 208-11 plus Mulvaney, 1975 : 290), and sub-recent at
Delamere (Arndt, 1962a). Those which are scattered at random over rock surfaces can hardly be said to have any particular style, and in fact it may not be accurate to describe them as "art" at all. Some at least could well have resulted from some wholly pragmatic activity such as the sharpening of tools.

At Devon Downs, and in some parts of northern N.S.W. and central Queensland, abraded grooves were used as the technique for making definite motifs on soft rock surfaces. They form a wide variety of non-figurative patterns, incorporating straight and curved lines. Turtles were also depicted by this method at Devon Downs, and bird tracks are frequently found at these sites (Hale and Tindale, 1930: 208-11). Engravings of this type in caves in the Clarence Valley, northern N.S.W., are dominated by "tally grooves" - extensive series of short parallel lines (McBryde, 1964b). Numerous cave sites in the Carnarvon Ranges, central Queensland, display a profusion and variety of motifs composed of abraded grooves, including "cup and ring" designs which range from a simple pit enclosed by a circle to realistic three-dimensional sculptures of vulvas (Goddard, 1941).

These engravings appear to be the earliest art style in the Carnarvon region; they are frequently and consistently covered by stencils. Stencils constitute another type of rock art which has a very wide distribution in space and apparently also in time; they are found in every part of Australia in association with every body of cave paintings and drawings. Hands are the most common motif, but other parts of the body, items of material culture and other small objects such as lizards and part of plants were also stencilled. Many stencils of European artifacts throughout Australia prove that this art was practised up to and including the contact period. Over a wide area of western and northern N.S.W., and through to central Queensland, stencilling was practised intensively and exclusively at one stage of the art history of this region. In the Carnarvons especially, a very wide range of objects were thus depicted, including hands, feet, boomerangs, clubs, wooden dishes, hafted axes, emu and kangaroo feet, and leaves.

The stencilled art in the latter area were in turn covered by painted motifs, in which non-figurative designs composed of intersecting straight lines predominate. Grids, lattices and single and multiple zig-zag lines are very common. These motifs comprise the latest phase of cave art in
the Carnarvons.* This region therefore displays a sequence of rock art styles which cannot be tied in at any stage to any of the major styles or groups of styles which occur elsewhere. These three local phases constitute an independent regional sequence, floating outside the system into which I have fitted most of Australian rock art.

Conclusion.

I have presented this tentative framework of Australian rock art history as an alternative to those of Lommel and McCarthy. In conclusion I can only claim that it seems to fit the known facts about the distribution and sequence of some prehistoric and recent rock art styles. It should not be regarded as a statement of proved fact, or used to explain other facts; it is a model rather than a completed structure.

Towards the end of his first major synthesis of Australian archaeology, Mulvaney wrote: "it is difficult for a prehistorian to assess Aboriginal art." (1969: 174). Yet the same could have been said for Australian prehistory in general, not long before this comment was published. During the early days of systematic research into Australian occupation deposits, each excavator was wont to set up his own system of cultural succession, and it appeared for a time as if the continent harboured many discrete regional sequences. But as time and research went on, the similarities between the various local "cultures" were seen to be at least as obvious as their differences, and an awareness of major phases in Australian prehistory set in. Recent works tend to discuss changes in artifact assemblages on both levels - the continent-wide transition from an early generalised stone industry to more specialised industries featuring a variety of finely flaked small tool types, and the subsequent decrease in the number of these; and also the

* The information in this paragraph and the preceding one is based on my personal knowledge of rock art sites in New South Wales and on the unpublished work of Mr. M.C. Quinell, Curator of Anthropology, Queensland Museum, on the art of the Carnarvon area. His assistance is gratefully acknowledged.
details of how these changes transpired differently in various regions.

The study of rock art has followed a similar course. Clear-cut stylistic sequences, such as those in Arnhem Land and the Carnarvons have been well-known for a long time, but they had never been successfully integrated into a wider context. McCarthy's attempt to impose a perceived regional sequence based on superimpositions at Port Hedland onto the whole of Australian rock engravings parallels Tindale's assertions of the continent-wide applicability of his five-stage Murray cultural succession (Mulvaney, 1969: 104). Mulvaney sounded a warning note on this subject in the same passage:

Systematic unravelling of stylistic superposition, developed by F.D. McCarthy, provided a relative sequence for some areas; yet the absolute age of all styles involved is undetermined, and it is rash to correlate over great distances. (1969: 174)

Detailed examination of McCarthy's method of determining sequence by superimposition, and the virtual failure of efforts to extract meaningful sequences from a quantitative analysis of superimpositions among Laura cave paintings suggest that only the most clear-cut, consistent and stylistically distinct superimposition sequences are worth using as a basis for any inference through time in rock art styles.

Since Mulvaney's well-founded expression of pessimism, Edwards' work on the distribution of rock art in inland Australia, and his analysis of relative proportions of motifs has provided a much sounder basis for some "correlation over great distances". I hope that I have managed to draw attention to some similarities between styles, even when they appear superficially to be very diverse. A system of classification and terminology which separates out traits relating to techniques, forms, motifs and other features has proved helpful in looking for patterns which cut across regional and stylistic boundaries. In fact, a concept of "style" which is based on all these descriptive levels is a useful one, because it enables "a style" to be defined by the regular occurrence and association of traits of various kinds.

When more site surveys fill in the gaps on the distribution maps, and fortunate circumstances provide dates for the common styles, then rock art will march with other categories of evidence about the nature and
history of Aboriginal culture in Australia.

Mulvaney re-iterated: "... prehistorians are loathe to generalise about the prehistory of Aboriginal art" (1969: 176), and at the time, who could have blamed him? But the water has been getting warmer since then, and before long it may be safe for him to jump in.
Acknowledgements

John Clegg and I argued interminably and sometimes usefully about most of the points made in this thesis.

Warwick Dix lent me his photograph of the engraving which decorates the frontispiece, and Bruce Wright turned it into a graphic.

Bob Edwards has been unfailingly generous with his superb photographs and with pers. comms., and he showed me Panaramitee.

My first sight of many Sydney rock engravings was at night, in the beam of a carbide lamp wielded by John Lough.

My mother, Mrs. Patricia McMah and my aunt, Miss Lilian Moore have assisted with the production of this thesis, as well as encouraging me greatly at every stage of my academic and professional life.

Kevin Maynard developed and printed my photos, drew all the maps and diagrams, and chivvied or morale-boosted as and whenever necessary.

Vincent Megaw helped me through my initial attempt to understand that elusive term, "style".

Sharon Sullivan read through the whole text of this thesis, which has been much improved by her comments and suggestions.

Percy Trezise introduced me to Laura, its cave art, and rum-and-creekwater.

Valma Wright did the last-ditch proof-reading for me.

My supervisor, Richard Wright, exercised a mild discipline and excised my worst attempts at levity.

Thank you all very much.

Lesley Maynard.


CREER, B. 1970. In the beginning...Mimag. XX, 3, 8-13.


ETHERIDGE, R. 1918. The Dendroglyphs or 'Carved Trees' of New South Wales. Sydney.


GODDARD, R.H. 1941. Aboriginal rock sculpture and stencilling in the Carnarvon Ranges. Oceania, 11, 368-73.


-- 1952. Paintings in Beswick Creek Cave, Northern Territory. Oceania, 22, 256-74.


STOCKDALE, J. 1789. The Voyage of Governor Phillip to Botany Bay. London.


-- 1968. Were these the first Australians? People, 19 (8), 1 - 8.


