

Media and social context: Influences on stylistic communication networks in prehistoric Sydney

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This paper explores some inter-relationships between style, media and social context in a regional prehistoric art style in the Sydney Basin in coastal south-eastern Australia (Fig. 1). Engravings on open sandstone platforms and a predominantly pigment tradition within sandstone shelters represent a dual media style which operated in the recent prehistoric past. These combined media provide insight into how style may have been used in the pursuit of differing social strategies within this region. There is an assumption that varying degrees of heterogeneity within two components of the one art system - operating simultaneously in the one environment - must be interpreted differently. It is argued that the differing stylistic uses of the two media reflects the pursuit of different social ends. In particular, varying degrees of heterogeneity within the assemblages of the two art media are interpreted in terms of varying social strategies associated with differing degrees of network 'openness'.

The rock art is located in two distinct physical contexts provided by the sandstone bedrock which defines this region. Engravings, or petroglyph, sites occur in open locations. In rockshelter locations the art consists of drawings, stencils, paintings and engravings. Open rock platforms on ridgelines and hillslopes, and cavernously weathered overhangs and shelters in the valleys and gullies, are characteristic of the sandstone bedrock. These locations have been the foci for extensive artistic activity. While the region is generally classified as coastal, within this there is observable environmental variation. Art sites of both types occur across the full range of ecosystems within the region, i.e. coastal margin, estuarine, riverine, forest, woodland and the more marginal hinterland.

Information exchange and stylistic heterogeneity

'One of the major functions of stylistic behaviour is to link those members of a community who are not in constant verbal contact with each other, and make their interaction more predictable and less stressful.' (Wobst 1977:327)

The notion of style as social strategy is based on a fuller consideration of the seminal paper by Wobst (1977), in which he proposes some general principles for stylistic expression in artefacts in terms of particular social communication processes. The points that are of specific relevance to this study are:

1. those messages which are most widely broadcast, that broadcast social group affiliation and that enter into processes of boundary maintenance indicate social-group-specific stylistic form;
2. specific stylistic forms seen by a relatively small number of individuals will reveal clinal distribution within and between social units.

This general theoretical approach has been applied to style in living societies to explain the degree of competition between

groups over resources (Hodder 1978). It has also been developed to explore the maintenance of personal and social identity distinctions (Hodder 1978; Wiessner 1983, 1984, 1990). In an archaeological context, this approach has more recently been applied to relate degrees of stylistic heterogeneity to the nature of prehistoric social networks. In particular, the European Upper Palaeolithic has been the focus for this type of analysis (Gamble 1982, 1984; Jochim 1983; Soffer 1987), although more limited applications have also been made on hunter-gatherer art in Australia (Lewis 1988, David and Cole 1990) and on pastoral rock art in Africa (Brandt and Carder 1987).

'Style' is defined in this paper as the particular way of doing or producing material culture which signals the activity of a particular group of people who distinguish themselves from other, similarly constituted groups. Style is non-verbal communication which negotiates identity (Wiessner 1990:107). It is 'that part of the formal variability in material

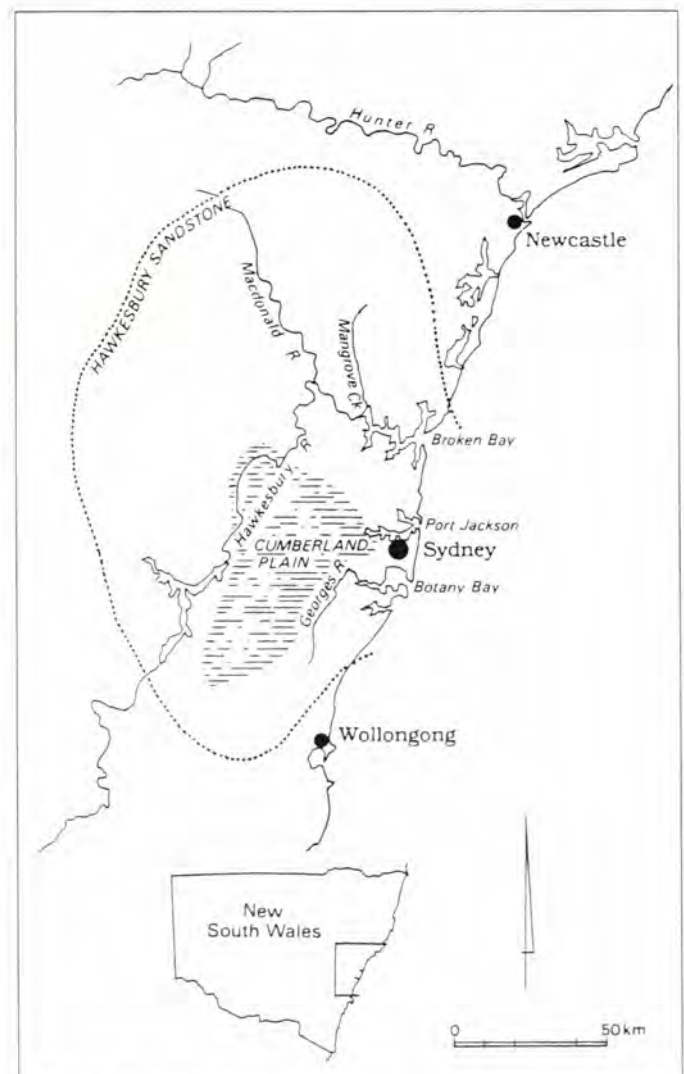


Figure 1 The Sydney region.

culture which can be related to the participation of artefacts in information exchange' (Wobst 1977:321).

'Stylistic heterogeneity' is perceived here as being the variability in style which demonstrates widely dissimilar artistic components; the end result of doing or producing material culture which signals either a less culturally fettered activity of a particular group of people, or the activity of a particular group which has less rigorous stylistic rules. In either case the heterogeneity needs to be *relative*, i.e. it can only be defined in comparison to stylistic activity which is more homogeneous.

Smith (1989), using Australian material tested the thesis that increased stylistic heterogeneity is correlated with more fertile environmental conditions and more closed social networks (e.g. Gamble 1982, Jochim 1983). Her analysis compared Arnhem Land bark paintings with 'acrylic' paintings from the Western Desert of Australia. The environments of these two sample areas are as diverse as can be imagined in Australia, and the art forms under analysis are also very different. Smith successfully demonstrated the greater heterogeneity of the secular art from the more fertile region, than the secular art of the arid zone. She also made important conclusions about social structure and symbolic behaviour (Smith 1989:147):

...The art of the Western Desert appears to function to integrate groups of people on the basis of their rights to specific sites, which are viewed in relationship to sites of neighbouring groups. Social interaction is less frequent but probably more intense, than in Arnhem Land. In both cases, however, social and artistic interaction occurs within a framework in which such interaction is derived from ancestral dictates ... it appears that art serves as a bounding function in Arnhem Land and a bonding function in the Western Desert.

Smith's classificatory system, however, may well have been a contributing factor to the diversity demonstrated by the Arnhem Land barks. Given that the two art bodies are intrinsically different, the selection of her taxonomy was extremely important to ensure that some level of comparability existed in any analysis of the two. For instance, the acrylic art sample classified 38 motifs, which was compared to a bark painting sample described by 307 motif classes. While intrinsic variety in an assemblage may require a larger taxonomy, much of Smith's classification appears to consist of unjustified splitting. Munn's (1966) distinction between motif systems of continuous and discontinuous meaning is also relevant here. Examples of the motifs which appear to have been unnecessarily split are the 25 Arnhem Land motifs which are fish with varying degrees of morphology and internal detail; the 46 anthropomorphic categories; the 15 snakes, and so on. Most (224: 72.9%) of her Arnhem Land motif classes occur only once in her sample paintings and are thus more likely to relate to 'assertive' stylistic behaviour than emblematic. While there is less repetition in the classification used for the Western Desert art, 15 of the 38 motif types (39.5%) still occur only once in the assemblage. Given this duplication of motif classes, the calculations of potential combinations possible and of motif co-occurrence for each art body (Smith 1989:126) are potentially meaningless.

Nevertheless, a clumping of these duplicated motifs would still produce a more extensive motif taxonomy for the Arnhem Land art than for the Western Desert art because of the figurative component of the former. In central Australian art,

compositional criteria create meaningful distinctions within formal categories (Dickens 1992). The potential for heterogeneity, based on motif, would thus always be greater for the Arnhem Land art body.

Classificatory problems aside, this is an excellent testing of the notion that art will be relatively more homogeneous in situations where groups of people need to reinforce the social bonds that exist between them. Smith's overall analyses do demonstrate that the Arnhem Land art, from a fertile and densely populated environment, is more heterogeneous in its motif elaboration than that of the arid Western Desert area, which is characterised by low population densities and open social networks. She states (Smith 1989:167) that the application of Wobst's theory of style:

... to prehistoric contexts is complicated by problems in determining environmental conditions and past population densities. However, despite these problems, the theory *does* explain social processes associated with stylistic variation among the art of hunter-gatherer populations. In archaeological circumstances where there is no ethnographic information available it may be necessary to analyse stylistic differences in the art system as a whole.

The engraved and pigment art bodies of the Sydney region provide a unique opportunity for just this purpose.

Regional context

There is no ethnographic data on how the art of the Sydney region functioned within Aboriginal society prior to white contact. There is, however, ethnohistoric literature compiled by journalists of the First Fleet (Collins 1975a [1798], 1975b [1802]; Phillip 1963 [1791]; Tench 1789, 1961 [1793], White 1962 [1790] etc.), linguistic evidence for the region (Dawes 1790; Capell 1970), and ethnographic work on remnant pockets of the original populations (Mathews 1897a, 1897b, 1901, 1903, Mathews and Everitt 1900). Extensive environmental research suggests that environmental conditions throughout the Holocene have been relatively stable (Costin 1972, Bowler et al. 1976) and there is a detailed context provided by four decades of archaeological research (e.g. Attenbrow 1987; Kohen et al. 1984; McCarthy 1948, 1964; McDonald 1992; Megaw 1974).

In the Sydney region comparisons of stylistic homogeneity can be made at regional and more localised levels (McDonald 1994) using varying scales of inclusion (Conkey 1987). In this paper it is intended to describe only the stylistic patterning at a regional scale and to discuss possible interpretations for these patterns.

The region falls within a single 'culture area', the south-east coast (Peterson 1976). The watershed for the Hawkesbury River further defines the regional culture area within the broader south-east coast. Given the size of this region it is assumed that environmental factors, and to a large extent the resultant economic constraints, would have been constant across the area. Based on existing 'environmental' models and on Wobst's (1977) theory of stylistic behaviour, the Sydney region, due to its position in the fertile coastal zone, could be expected to have had high population densities and territorially based social networks. Linguistic and ethnohistoric evidence indicate underlying social patterning, but the stylistic variability can be explored in this study at a much finer scale than in previous studies (e.g. of the European Upper Palaeolithic) which ultimately compared style regions and not the internal variability of these.

Ethnohistoric context

The Europeans who arrived in Australia on the First Fleet, in 1788, observed aspects of the social organisation, languages and population sizes which existed in the region. While little systematic ethnographic information was collected during these early years, there are records which, in combinations with more generalised ethnographic material, can provide a context for the analysis of this prehistoric fisher-hunter-gatherer rock art. While the early observers noted the presence of rock art sites around the region, no records of the art's function were made.

Four languages are recognised as being spoken across the region at contact (Capell 1970; Dawes 1790; Mathews 1897c, 1901; Mathews and Everitt 1900). These are the *Darjinyung*, *Guringai*, *Dharuk* and *Tharawal*. The assumed geographic distribution of the four language groups is based on Capell's (1970) model (Fig. 2).



Figure 2 The language areas defined by Capell (1970: Fig. 1). Spelling of language areas as used by Capell.

Residence groups or 'bands' in the region consisted of named economic units with designated tracts of land (Collins 1798[1975]:453, Hunter 1793[1968]:62). 'Tribes' are perceived as having comprised a number of these smaller residence groups, speaking dialects of a common language. Within the range of any one linguistic group or tribe, there would have been a number of smaller localised bands, maybe as many as fifteen (Kohen and Lampert 1988), who would have had kin and/or totemic links with people in other groups and therefore modes of access to resources.

Considerable social interaction within and across linguistic boundaries occurred. Organised social events (initiation ceremonies, dances etc.), as well as the exploitation of windfall

resources (such as feasts on beached whales) resulted in aggregations of large numbers of people of mixed language groups (Bradley 1786-92[1969]:112, 120; Collins 1798[1975]:25; Tench 1789[1961]:52). It would appear that at least some forms of ritual behaviour in the region required the participation, and possibly consent, of neighbouring tribes (Collins 1798[1975]:486, 1804[1910]:311; Mathews 1897c:1-2; Mathews and Everitt 1900:276).

Food resources, economic options and adaptive material culture varied across the region. This could be reflected in the different emphasis on maritime and land animals on the coast and inland, as well as a differential distribution of certain material culture items. To the north and south of the region, economic differences (east/coastal and west/inland) may have been reinforced by cultural difference. In both of these areas linguistic boundaries existed at contact between a coastal and hinterland peoples.

The linguistic boundaries may be reflected in schematic or other stylistic traits in the art across the region. The presence of distinguishable, localised bands as well as broader language boundaries suggests that there may have been a highly complex pattern of artistic behaviour and signatures within and across tribal 'boundaries'.

The rock art

Over 4,000 art sites have been recorded in the Sydney Basin. As indicated above, these can be broadly divided into two components, open engraving sites and sheltered pigment sites. Both the engravings and the pigment art fall within Maynard's (1976:200-201) Simple Figurative classification:

the style is dominated by figurative motifs... the majority of (these) ... conform(ing) to a pattern of crude naturalism. Whether the 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.

Human tracks are the most commonly depicted motif in the engraved assemblage, followed by fish, kangaroos and men (McDonald 1990). Other less frequently depicted motifs include items of material culture (axes, boomerangs, shields etc.) and a variety terrestrial animals (Fig. 3). There is usually very little infill or decoration, although quite intricate examples of this do exist. Ears, mouth and eyes are usually the only form of detail.

Schematically, the pigment art is similar to the engraved assemblage, in terms of subject matter and general form. The scale is somewhat smaller, possibly as a result of relatively smaller 'canvas' size. There is more use of infill, decoration and detail with the pigment motifs. Stencilling predominates in many parts of the Basin, such that hand stencils are the most common art form within this component.

Of the depictive motifs, anthropomorphs are the most common, closely followed by kangaroos, other land animals, fish, birds and weapons (Figure 3). Non-figurative motifs, some quite complex, are found in localised areas of the Basin.

Sampling and theoretical consideration

The two art components are roughly equal in frequency and both are found in all geographic zones across the region. A

relatively large sample (>30%) of each component has been recorded in sufficient detail to allow quite specific analysis. A total of 717 engraving sites and 546 shelter art sites have been used in these analyses. The size and geographical distribution of this data base allows for the detailed investigation of many questions relating to style.

Style is defined here at a particular and fairly general level. This analysis is not aimed at investigating the standardisation of formal variation *per se*, but rather at the motif ranges and tendencies for motif categories to co-occur across the region. It is considered that cultural choices are being made and indeed indicated by the use of certain motifs. While this is a different level of choice to that indicated

by the way that, for instance, terrestrial motifs are depicted (i.e. with two leg or four legs in profile; one ear or two ears, etc.) conservatism in the range of motifs used can provide socially interpretable stylistic information (viz. Smith 1989). Sackett (1990) proposed a challenging alternative classification system based on thematic variety. He provides various examples of how the combination of motifs and compositional features may indicate high levels of ethnically significant patterning and he suggested that 'themes may well be the [things] that give congruence to isochrestic choices in non-material aspects of cultural life' (1990:41). While this type of type of approach has not been explicitly attempted on an archaeological rock art assemblage, such an approach is worth testing.

McMah (1965) in her early analysis of the engraving of this region identified changes in motifs across the region which she attributed to environmental rather than cultural causes: more fish and marine animals were seen to be present on the coastal strip, while more terrestrial species were found further inland. Such a division, while clearly indicating environmental influences, does not necessarily abrogate cultural choices being made by the artists. Fish and maritime fare were probably more important to those living on the coastal strip, while land animals were higher on the list of gastronomic priorities for those living inland. This importance may have resulted in their being engraved more often. The interesting thing about McMaha's finding is that it was

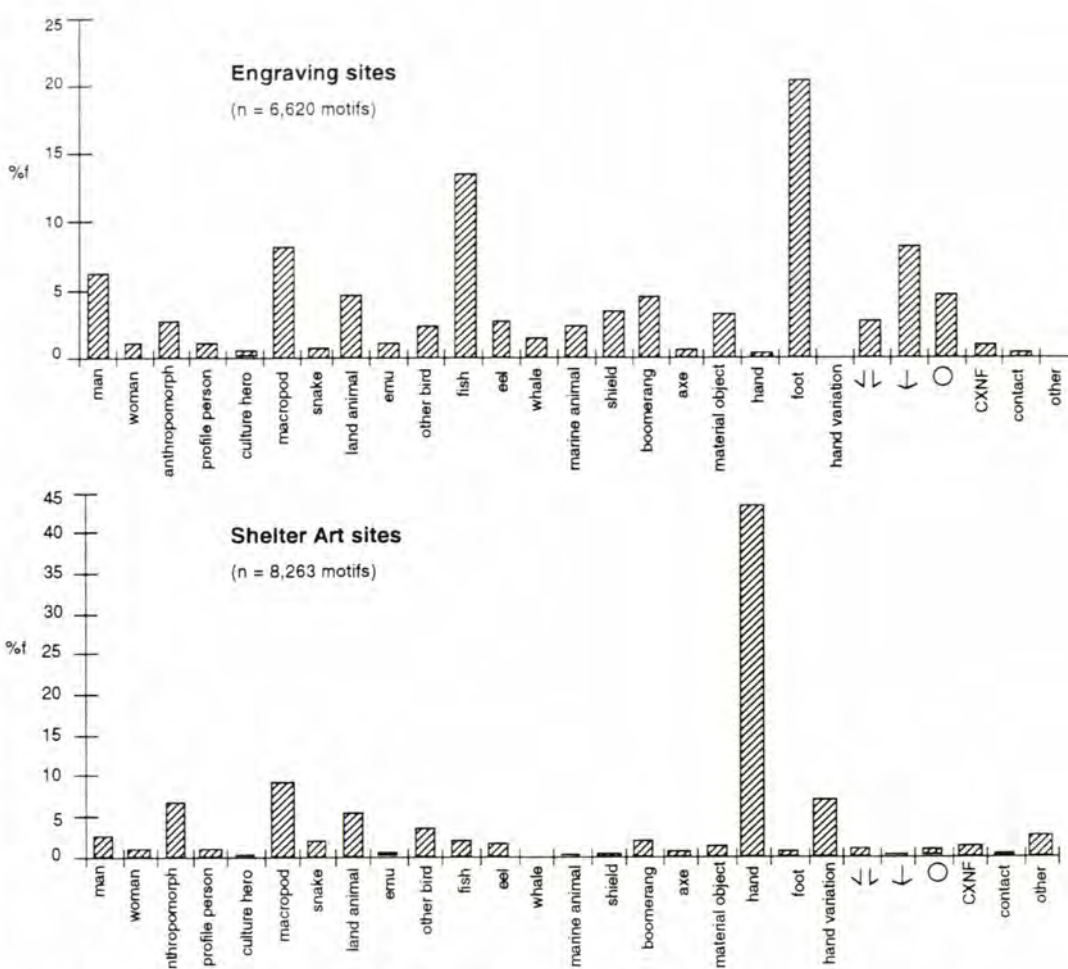


Figure 3 Motif preferences for the two art components.

not fully supported by this current analysis. For instance, there was a predominance of land animals, particularly kangaroos, right across the region in the shelter art sites, including the coastal strip. While several marine animals were only found on engraving sites of the coastal strip (e.g. whales, stingrays, sharks), eels occurred frequently on inland sites and equally across the region, while generic fish engravings were also widespread.

The question regarding the suitability of motif as an indicator of stylistic choice across the region is supported by

	Shelter art sites	Engraving sites
Minimum	1	1
Maximum	857	174
Mean	26.4	10.9
Stand Dev.	55.4	18.0

Table 1 Statistics for assemblage sizes in the two art components across the region.

	Shelter art sites	Engraving sites
Minimum	1	1
Maximum	24	19
Mean	4.5	3.4
Stand Dev.	3.8	4.0

Table 2 Statistics for total number of motif categories recorded in sites from the two art components across the region.

several major differences found across the region in the presence and/or absence of certain motif classes. For instance, in the south of the region where a style boundary is identified, there are no engraved culture heroes, emus, profile anthropomorphs or contact motifs. None of these absences can be ascribed to environmental causes. All result from cultural choices.

A classification based on motif combined with Correspondence Analysis, which looks for patterns in the combination of variables (i.e. motifs), were considered appropriate ways of investigating the proposal of thematic change as a component of stylistic choice. More detailed testing of this approach has also been undertaken (McDonald 1994, 1999) by analysing individual classes of motifs to test for

more subtle changes in 'compositional features' (Sackett 1990) across the region.

Variable No.	Motif description	Engraving sites		Shelter art sites	
		Maximum	% sites present	Maximum	% sites present
1	man	14	27.8	34	15.6
2	woman	5	7.8	7	9.1
3	anthropomorph	15	16.1	29	28.0
4	profile anthropomorph	5	7.4	9	5.6
5	culture hero	2	4.1	6	1.6
6	macropod	13	34.5	45	39.8
7	snake	3	6.3	22	15.3
8	other land animal	10	23.7	17	29.2
9	emu	7	7.1	6	3.8
10	other bird	11	14.1	38	17.8
11	fish	47	34.9	10	14.0
12	eel	7	13.6	16	13.6
13	whale	7	9.9	1	0.5
14	other marine animal	9	13.6	5	3.6
15	shield	23	14.4	7	6.2
16	boomerang	15	20.1	33	12.2
17	axe	5	3.9	14	5.3
18	other material object	13	14.8	12	9.1
19	unidentified open	20	23.7	47	45.2
20	unidentified closed	19	39.1	157	77.9
21	hand	3	1.5	417	37.4
22	human foot (mundoe)	99	21.9	9	6.5
23	hand variation	*	-	79	15.6
24	roo track	18	6.0	13	7.1
25	bird track	95	9.9	5	2.2
26	circle	17	13.4	30	4.4
27	complex-non-figurative	3	7.4	12	10.7
28	contact motif	11	1.5	22	2.9
29	other	*	-	43	11.4

*Not counted in engraving sites

Table 3 Maximum number of times a motif recorded in any one site and percentage of sites at which each motif is present

The potential for heterogeneity

In order to investigate the stylistic variability in these two art contexts, it was necessary to consider the potential for heterogeneity in each. A method for assessing the significance of stylistic heterogeneity, if found, needed to be established. If a basic potential for variability exists in either medium, then before any significance can be attributed to this finding, the variability demonstrated needs to be greater than the intrinsic potential for variability.

The motif classes used for the two assemblages were almost identical, with only two extra motifs being counted in the shelter art assemblage. There is little chance therefore of classification playing any role in either components relative variability (e.g. Gamble 1982 vs Soffer 1987, Smith 1989).

One potential source of greater heterogeneity in the shelter art assemblage is found in assemblage size. Shelter art assemblages are considerably larger than their open engraved components.

The general statistics for site size (Table 1) indicate that the potential for heterogeneity of motif assemblages based on this factor is far greater for shelter art sites than it is for engraving sites. The variability inherent in shelter art sites according to site size is three times as great as that demonstrated by the engraving sites. When looking at the numbers of motifs used in the different sites for the two media, however, this variability is substantially decreased (Table 2). While the maximum number of motifs present at any one site is greater for shelter sites than engraving sites, the standard deviations for the two are very similar.

Variable No.	Motif-variable description
1	Anthropomorphic
2	Terrestrial animals
3	Birds
4	Marine animals
5	Material objects
6	Tracks
7	Other

Clumped variable 1 = v1 - 5; 2 = v 6-8; 3 = v 9,10; 4 = v 11-14; 5 = v 15-18; 6 = v 21-25; 7 = v 26-28 (ie. individual variables, see Table 3). With shelter art sites clumped variable 6 includes v 23; 7 = v 26-29. Unidentifiable motifs have been excluded from this level of analysis.

Table 4 Clumped motif variables used in analysis. Engraving and Shelter art sites.

An analysis of the motif occurrence (maximum number of times a motif is present at any one site), and the motif emphasis (percentage of sites at which certain motifs have been depicted), indicates that while there are different foci in the two media, both show a general consistency of motif use (Table 3).

There is no indication of any particular emphasis on particular important/common motifs in either context. *Mundoes*, fish and macropods are the most commonly depicted motifs in the engraved assemblage. These occur in 22% (157), 35% (250) and 34.5% (247) of sites respectively. The most commonly depicted motifs in the shelter art assemblage are hands and macropods. These occur in 37% (206) and 40% (219) of sites.

Analyses

Correspondence Analysis (CA) was applied to both art components to investigate sources of variance within these data sets. The advantage of this technique over other such multivariate tools, is that the variables, in this case *motifs*, which create these groupings can be identified. It is not so much the presence of individual motifs which create the variance, but *the combination* of variables. With the engraving sites, the analysis was based on clumped set of seven motif variables (see Table 4) translated to binary (i.e. presence/absence) data, and a sample of 705 engraving sites and 546 shelter art sites.

Sites which contained only unidentified motifs were excluded from the analysis. The results presented here are based on the analysis of the regional data base (McDonald 1990)¹.

The analysis of engravings confirmed that the Sydney Basin engraved component was a relatively homogeneous body of art. No major internal groupings were identified, although certain sites were identified as being outliers. On the basis of the scores for the latent roots (Wright 1989), the first component accounts for a significant amount of the variance in the data set, and the first two components 64% of this. Thus the CA is interpreted as accounting well for the variability within the assemblage. The plot of the first two co-ordinates for the variables (Fig. 4) reveals that four of the variables (1, 2, 3 and 4) are good discriminators (Table 4). In the first co-ordinate, fish (4) and birds (3) are negatively correlated, while in the second co-ordinate, anthropomorphs and birds (1 and 3) are negatively correlated with land animals (2). This would suggest that sites which contained large numbers of bird motifs would have very few marine depictions, while sites with a large number of land animals would contain small numbers of anthropomorphic and bird depictions (and *vice versa*). Material objects, tracks and 'other' motifs are relatively poor discriminators being situated, as they are, close to the origin.

With the shelter art assemblage a similar pattern was determined, although different motifs produced this patterning. Again, on the basis of the scores for the latent roots (Wright 1989), the first component accounts for a significant amount of the variance in the data set. Here, the first two components account for 54% of the variance. Again, the CA is interpreted as describing well the variability within the assemblage.

The plot of the first two co-ordinates for seven clumped variables reveals that the data is discriminated quite well by five of the variables (Fig. 4). Only variables 1 and 4 are close to the origin (i.e. $x + y = 0$ on the bivariate plot) having little influence in distinguishing between sites. In the first co-ordinate, variables 2 and 6 exhibit a negative relationship with variables 3, 5 and 7. In the second co-ordinate, variables 2 and 6 are inversely related. This indicates that sites which contain a combination of birds, material objects and/or other motifs are very different to sites which contain land animals and/or tracks, and that sites which contain high numbers of one set of variables are likely to contain low numbers of the other set.

The distribution of motif variables on the graph is mirrored by the distribution of sites. Sites which are poorly discriminated by their motif assemblage lie close to the origin. Sites which are well discriminated on the basis of their motifs, are distributed across the graph in the direction of the variables which are present in their assemblages. For example, sites which have predominantly tracks, i.e. hand stencils, are located in the negative quadrant: sites which have predominantly birds in their assemblages are located in the positive quadrant.

On the basis of the CA results, no distinctive localised variability across the region in either component can be identified. However, the existence of certain stylistic clines in the area are present and are visible if the database is subdivided into more manageable sub-groups. The localised variability can be demonstrated in the bivariate sub-plots by the

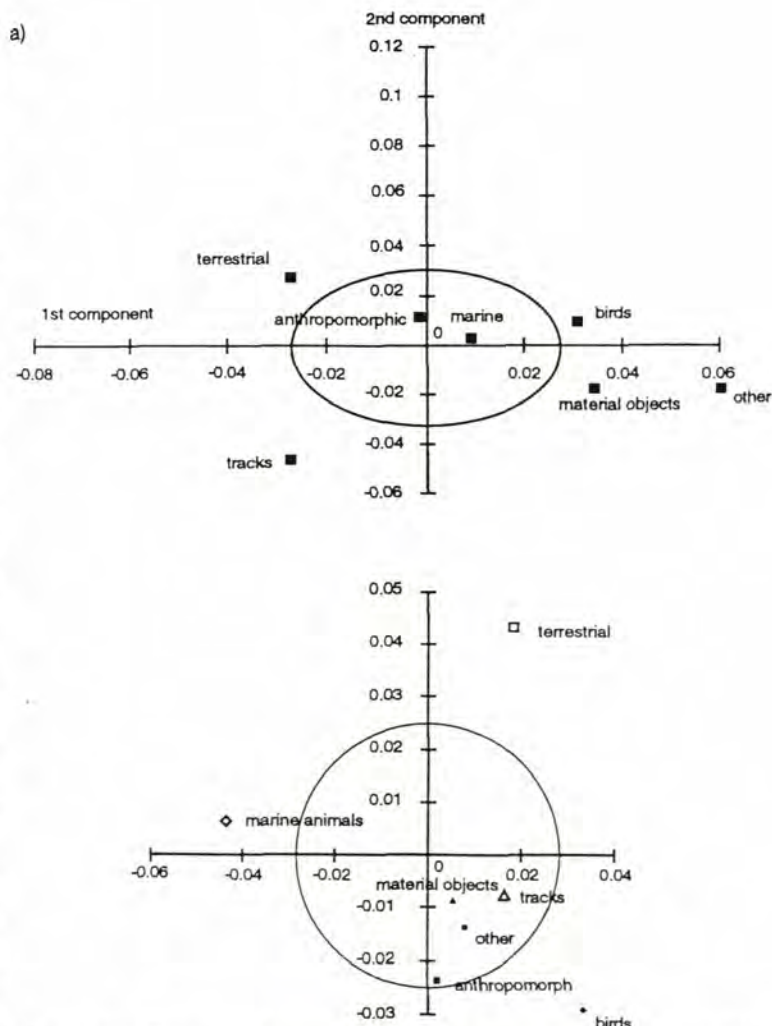


Figure 4 Correspondence analysis. Component scores for variable. Both art components.

distribution and/or clustering of sites relative to the origin. Sites close to the origin are those which are poorly discriminated i.e. relatively homogeneous. Those which are dispersed away from the origin are well discriminated by their motif assemblage, and are less homogeneous. In other words, 'common' sites fall close to the origin; unique or more unusual sites are located away from the origin. The identification and distribution of outlier sites in localised areas is the key to

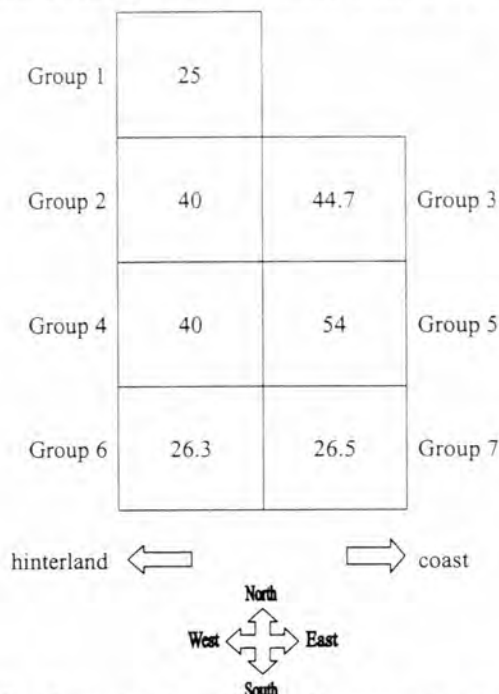


Figure 5 Engraving sites. Levels of homogeneity, shown as percentages of homogenous sites, according to broad geographic groupings. Based on the bivariate plots (CA) for these areas across the region.

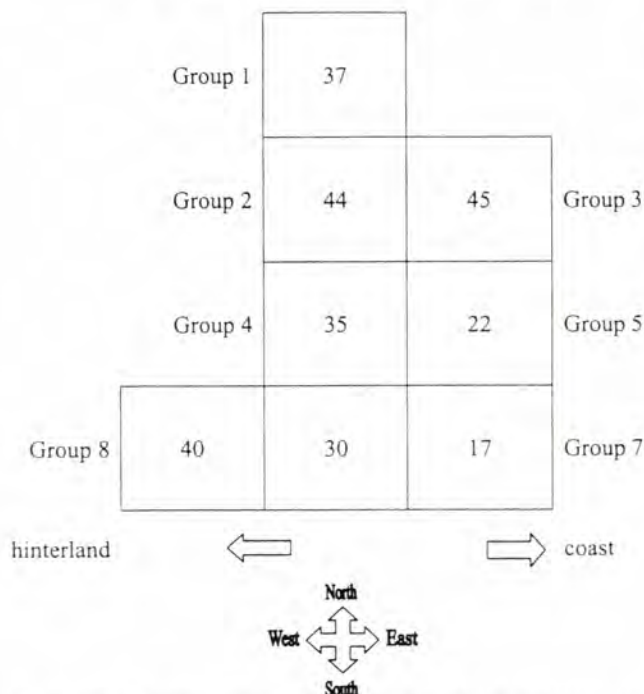


Figure 6 Shelter sites - motifs. Levels of homogeneity, shown as percentages of homogenous sites, according to broad geographic groupings. Based on bivariate plots (CA) for these areas across the region.

investigating stylistic variability across the region, since it is patterning in the combinations of motifs which is considered to demonstrate thematic choices (viz. Sackett 1990; McDonald 1999).

In order to quantify this analysis, the number of sites within a defined and consistent radius of the origin were noted, allowing for a calculation of the percentage of "common" and outlier sites in each area. Given the disparate sample sizes, this was a necessary step in the comparison of the data overall.

The distribution of the outlier sites in particular quadrants was also investigated, since variations in this result across the region would enable more specific statements on localised variability. This quantification provided some interesting results. It indicated that localised variability in assemblage content does exist for both art components. It also indicated, however, that the levels of homogeneity in the two media were different. The engraving component is more homogeneous than the shelter art assemblage (Figs 5 and 6).

The most homogeneous engraving assemblages were located in the coastal centre of the greater Sydney Basin (Groups 5 and 3; Fig. 5). Moving outwards from the geographic centre, this homogeneity decreased. As well as differences in overall homogeneity, there was marked variation in the distribution of outlier sites, or compositional focus, across the region. This suggested that the emphasis on certain combinations of motifs did vary across the region, and that it was changes in these combinations which characterised the stylistic clines across the region. These were sometimes explicable in terms of economic factors e.g. proximity to the sea. Not all of these variations, however, were so easily explained.

A similar trend was observed with the shelter art sites, in that there is a core of more homogeneous sites in the centre-west of the Sydney Basin (Fig. 6). Away from this central core there is increasing variability. This homogeneous focus, however, is not the same as that found for the engraved assemblage.

Discussion

The multivariate analyses undertaken in this research found that both art media in the Sydney region exhibit synchronic stylistic variability on the basis of motif. However, the degree of stylistic homogeneity is *less* in the shelter art component than is found in the engraving component. This is considered a significant result. What then, are the possible interpretations for varying levels of heterogeneity within different components of the one regional style?

It is possible that the mere nature of the techniques used in the two media were sufficient for a greater degree of schematic flexibility in the pigment tradition while the more intensive labour required in the production of engravings required a more fixed 'mental template'. This, however, cannot explain heterogeneity in thematic variation. It is also possible that the two systems are not contemporaneous but demonstrate diachronic variability. I have argued that this, however, is unlikely (McDonald 1991, 1994), since both forms were still being practised at European contact.

It is proposed that these varying levels of heterogeneity reveal the pursuit of different types of social strategies through style. The higher level of homogeneity in the engraving medium demonstrates larger scale group cohesion. The more heterogeneous medium demonstrates localised group identifying behaviour. This argument can be supported by the archaeological data, and by following Wobst's (1977)

audience and social context is important in developing this argument.

The contemporaneity of art and occupation deposit has been demonstrated at three shelter art sites in the region (McDonald 1994). In the three sites tested, there was a strong suggestion that the main phase of pigment art production coincided with the most intensive period of shelter occupation. This is consistent with Wobst's (1977) prediction that an art form which is viewed by a broad section of the community will be the most susceptible to *local* group stylistic messaging. The 'domestic' art of a region would be the most likely medium to reveal stylistic patterning which functioned at most as boundary maintenance and at least to demonstrate localised social affiliations. Moreover, if pigment art was produced in shelters, where it would have been accessible to a wide audience, then the art *was* fulfilling a function very different from an art form which was produced 'in private' or for a restricted audience.

Such is the case with engraving sites, where occupation evidence is seldom recorded. In this way, the social context of art production at these sites is distinguishable from the generalised occupation evidence found at art shelter sites. There is evidence, however, that the engraving sites are prominent on major access routes around the region, and that there are also major sites which appear, through their motif assemblages, to be depicting ceremonial or mythical beings. If these sites *did* function as ceremonial sites, involving the co-operation of participating neighbouring groups, it might be expected that the overriding aim of this art's production was to maintain broader scaled group affiliation. A more homogeneous art form is arguably more culturally fettered. If its function was broad scale social cohesion this should make the art form less susceptible to individuality and other forms of localised stylistic 'mutation' (Wiessner 1989) and, therefore, more homogeneous. This result is consistent with Wobst's (1977) prediction that art which is subject to viewing by a relatively small number of individuals will have a relatively homogeneous distribution between social units.

Archaeologists have long recognised the differing inherent capacities of different types of artefacts to encode social information (Lechtman 1977; Sackett 1977, 1990; Morwood 1984). In this paper I have extended this to systematically analyse relationships between media and social context within a single prehistoric artistic system. My concern has been less with assessing the inherent constraints of raw materials on style – though this has been integral to the overall analysis – than with assessing relationships between particular media, style and social strategies. In the Sydney Basin, the higher levels of homogeneity in the engraving medium, associated with a low incidence of occupation debris, reflect social strategies aimed at larger-scale group cohesion. Conversely, the more heterogeneous medium of painting, associated with a high incidence of occupation debris, reflect social strategies aimed at localised-group identifying behaviour. Thus, through the differential use of media, groups in the region, who were not in constant verbal contact with each other, were able to practise important, and varying, social strategies through their use of style.

Endnote

1. Since this paper was originally presented at the AURA Rock Art Conference in Cairns, this analysis was completed and extended to a detailed analysis on the basis of language areas and drainage basins (McDonald 1994). These more

recent analysis support the general findings of the earlier analysis but introduce considerable complexity into the regional patterning. The earlier general analyses, as thus retained for this paper.

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Since this paper was originally presented in 1992, I have finished my doctoral research and fleshed out many of the ideas which were originally presented in Cairns. This paper has been considerably improved by this process, and by comments from Andrée Rosenfeld, Claire Smith and two anonymous reviewers. Discussions with Andrée Rosenfeld, Howard Morphy, Claire Smith and Martin Wobst have provided further grist to the mill. I would like to thank these people, and Richard Wright who discussed with me the statistical aspects of this analysis. I would also like to thank Claire Smith for taking the initiative and organising this session at the conference. This paper was originally accepted for publication by CUP in a rock art book edited by Claire Smith. The proposed book was subsequently abandoned.

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