

# 12

## REGIONAL SYNCHRONIC VARIATION: SHELTER ART

### Introduction

This chapter looks at regional stylistic variability in the shelter art assemblage. As with the engraved assemblage, the aim was to identify broad scale patterns. These analyses explored both motif depiction and technical variation. These results are compared with those achieved for the engraving sites in chapter 11.

Quantitative analyses here again focused on motif combinations, not on qualitative aspects of motif classes. The overall aim was to be able to compare the engraving and shelter art assemblages - despite their technical differences.

The approach and methodology for both art components were detailed in chapter 11. The classification system, original data and computer bivariate plots supporting the CA were provided in the original thesis<sup>37</sup> (McDonald 1994a: Appendices 1, 5, 6 and 7).

The CA results for both motif and technique are presented in terms of drainage basins. The three different locations investigated with the engraving assemblages, were again subject to more detailed analysis of the CA results.

The distribution of uncommon motifs is explored with this component also. Profile people, culture heroes, items of material culture and complex-non-figurative (CXNF's) appear to be good indicators of localised cultural choices being made by pigment artists. Contact motifs are again investigated (McDonald 2008).

As with the engraved component, small scale qualitative analyses of motif depiction and preference were undertaken. To enable comparison between the two media, shields and culture heroes were again the focus of this analysis.

### Correspondence Analysis (CA): regional data, results and interpretation

Basic statistical information about motif and technical information (i.e. average assemblage size, motif frequencies, colour usage etc.) was presented in chapter 5. The multivariate technique (CA) used here allows quantified statements to be made about the regional homogeneity as well as demonstrating what variables distinguish sites (i.e. the sources of variance within the data base).

The same procedures were followed with this medium as were described previously for the engraving assemblage. Motif variables were the same as those used for the engraving sites with two additional motifs (Table 12.1).

Analysis commenced with unmodified count information (29 motif variables). This taxonomy was then reduced to seven clumped taxa (Table 12.1) and the CA was run using binary data. The CA of the shelter art's technique variable comprised 546 sites, while the CA of motif variables (which excluded sites with only unidentified motifs) involved 439 sites.

### *Motif*

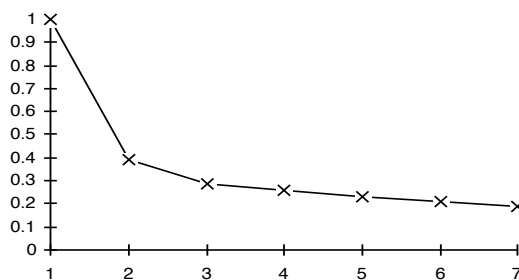
The first two components account for 54.4% of the variance in the sample. The scree slope plot (Wright 1992) demonstrates that the first two components describe considerable structure in the data (Figure 12.1). The plot of these first two co-ordinates reveals that the data is discriminated well by five of the seven variables (Figure 12.2a). Variables 1 and 4 are close to the origin and

<sup>37</sup>These are not included here as these represent many hundreds of pages of close-typed computer files.

**Table 12.1: Shelter Art sites: Clumped motif variables used in Correspondence Analysis.**

Variable No.	Motif/Variable description
1	anthropomorphic
2	terrestrial
3	birds
4	marine
5	material objects
6	tracks
7	other

Clumped variable 1 includes individual variables 1 - 5; 2 = v 6-8; 3 = v 9,10; 4 = v 11-14; 5 = v 15-18; 6 = v 21-25; 7 = v 26-29 (see Table 5.3). Unidentifiable motifs have been excluded from this level of analysis.

**Figure 12.1: CA results. Scree slope plot of the latent roots showing that the variance is well accounted for by the first two components.**

is relatively homogeneous, with no major internal groupings.

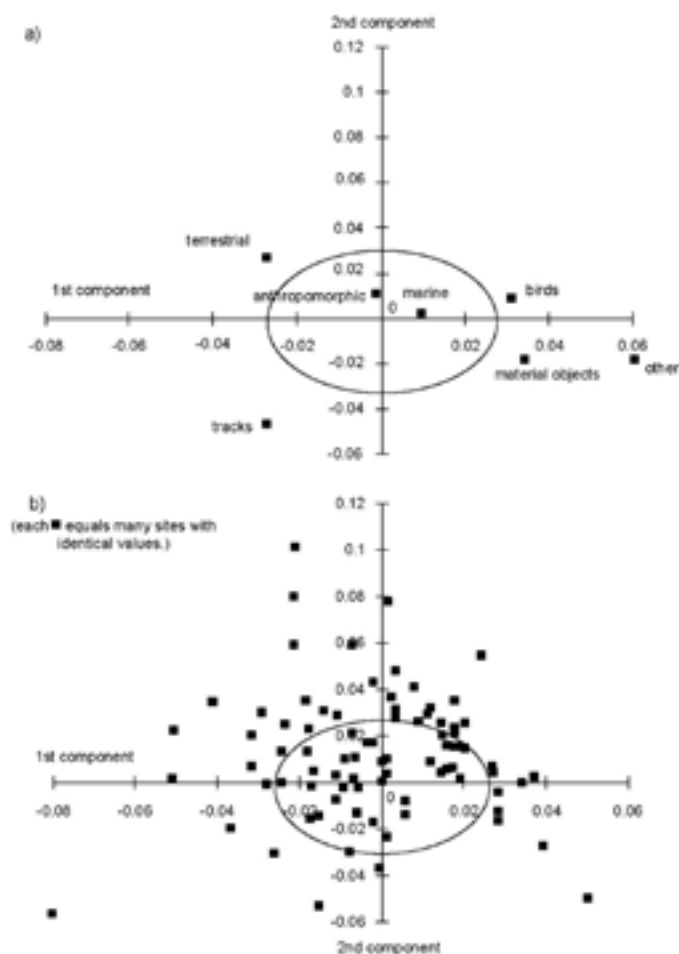
Given the size of the data base, the usefulness of Figure 12.2b for detailed interpretation is low. Thus, the results were again replotted using various subdivisions of the data. All sub-plots are based on exactly the same results, but the smaller sample sizes enable more detailed interpretation.

The data were first subdivided into regional sub-groups which could be interpreted geographically. These groups were based on the AHIMS site identification number, which is in turn based on map sheet location (Table 12.2, see Figure 136). Groups 1 - 7 are directly comparable to the similarly numbered engraving Groups. Group 8 is to the west of Group 6 - an area where no engraving sites are recorded.

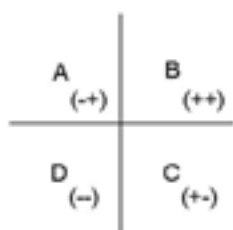
While an arbitrary division of the sample, this method achieved good control was on general east-west and north-south divisions in the data (McDonald 1985a). All bivariate plots from the CA results were presented (McDonald 1994a: Appendix 6, Figures A6:17 - 26). These are summarised here.

**Table 12.2: Analytical grouping of shelter art sites according to AHIMS Id. numbers. Groups used in regional CA analysis.**

Group	Map number	1:250,000/1:100,000	Sample size
Group 1	37 - 5 -	Singleton/Howes Valley	30 sites
	45 - 1 -	Sydney/Wallerawang	
Group 2	45 - 2 -	Sydney/St Albans	66 sites
Group 3	45 - 3 -	Sydney/Gosford	144 sites
Group 4	45 - 5 -	Sydney/Penrith	17 sites
Group 5	45 - 6 -	Sydney/Sydney	107 sites
Group 6	52 - 2 -	Wollongong/Wollongong	171 sites
Group 7	52 - 3 -	Wollongong/Port Hacking	6 sites
Group 8	52 - 1 -	Wollongong/Burragarang	5 sites



**Figure 12.2: CA results, shelter motifs. Component scores a) motifs and b) sites.**



**Figure 12.3: Quadrant identification used in interpreting the shelter art CA results.**

While no distinctive groupings occur within the data base, that there are style clines across the Sydney Basin. These can be identified in the bivariate plots by comparing the degree(s) of homogeneity in each group, and by the presence and distribution of outlier sites, relative to the origin. The same technique was used for the engraving assemblage. The number of sites within a defined and consistent radius of the origin was noted<sup>38</sup>, the percentage of ‘common’ sites was calculated and outlier sites in each area

were identified. This was a necessary step given the disparate sample sizes.

The distribution of the outlier sites in particular quadrants (Figure 12.3) was investigated as variations in this result across the region enable more specific statements on localised variability. This analysis demonstrates the presence and nature of localised variability in assemblage content across the region.

### Technique

The technique classification was initially devised for the *Rock Art Project* (McDonald 1985a, and see McDonald 1988a). It includes a combination of technique (variables 4-8, 16), form (variables 1-3, 9-11) and colour (variables 12-15: Table 5.4).

<sup>38</sup>The same consistent radius as used for the engraving sites was employed here. This has been drawn on each of the bivariate plots as an heuristic device.

**Table 12.3: Shelter Art sites: technique variables used in the CA.**

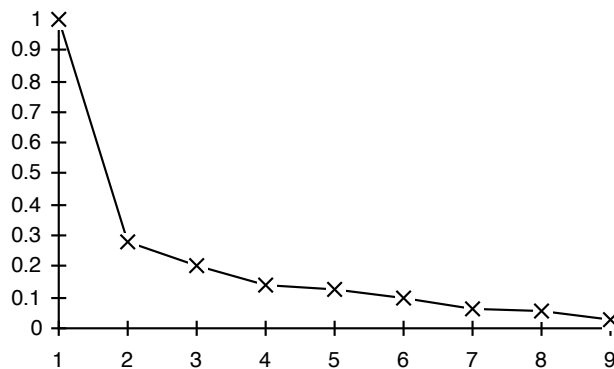
Variable No.	Technique description
1	outline
2	infill/solid
3	outline and infill
8	stencil
12	black pigment
13	white pigment
14	red pigment
15	yellow pigment
16	engraving (scratched, pecked)

Given the interdependence of some of these 18 technical variables (i.e. a depictive motif is described by a combination of all variables excluding #8); the technique taxonomy was reduced to include only unlinked variables (Table 12.3). The form variables (#'s 1-3) provide information which can be directly compared with the engraving assemblage.

The first two CA co-ordinates account for 64.4% of the variance in the data set and account well for its structure (Figure 12.4).

A significant amount of the variance is

accounted for by the first component. The bivariate plot of the first two co-ordinates reveals good discrimination between sites in the region (Figure 12.5).



**Figure 12.4: CA results Technique. Plot of the latent roots demonstrating that the variance in the data set is well accounted for by the first two components.**

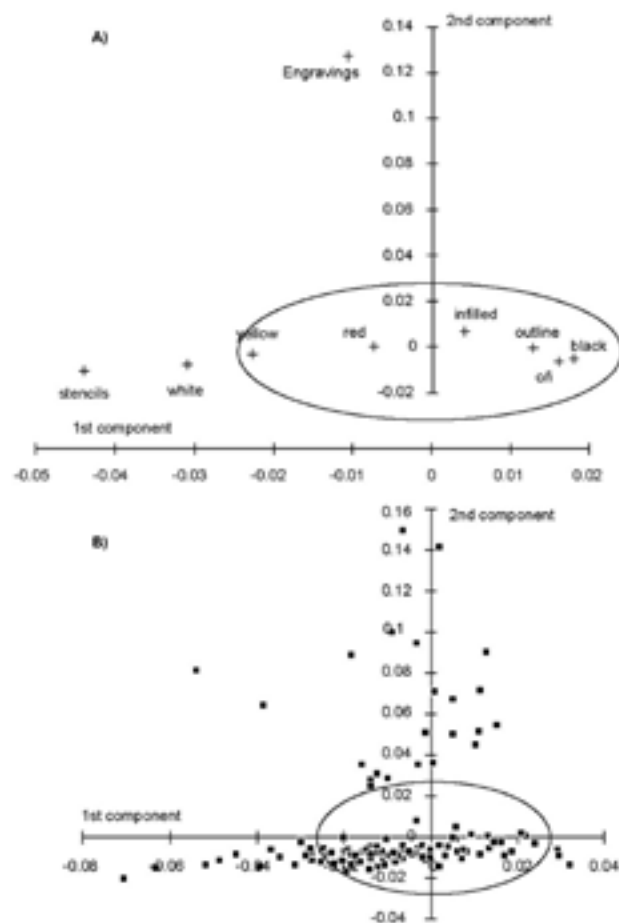
In the first component, variables 8, 12 and 13 (stencils, white pigment and yellow pigment) are inversely related to variables 1, 3 and 12 (black pigment, outline and outline and infill motifs). In the second co-ordinate, variable 16 (engravings) exhibits a strong positive value, while all other variables have a weak negative value. Archaeologically, these results indicate that sites which have large numbers of stencils and/or white pigment present are different to assemblages with black outline and infilled motifs. This dichotomy between white stencils and black drawings is a good summation of regional characteristics.

The bivariate plot for the distribution of sites (Figure 12.5b) reveals a solid clustering around the origin with sites being pulled out along the first co-ordinate. The majority of sites in the region are relatively homogeneous, but the variables used identify structure in the data and hence sources of variability amongst the assemblages. The regional sample was again too large to allow meaningful interpretation. Again, the results were replotted on the basis of the broad geographic sub-divisions described above (see Table 12.3).

These CA results describe how sites vary according to technique across the region. The relative homogeneity of the defined groups and the focus of each group's outlier sites was again the basis for interpreting varying levels of technical similarity/diversity.

### *Regional Comparison*

Both motif and technique analyses indicate a core of more homogeneous sites in the centre-west of the Sydney Basin (Figure 12.6 and Figure 136). This homogeneous (core) focus is not in the same location that was found for the engraved assemblage. The sites from Groups 2 and 3 are the



**Figure 12.5:**  
CA Results for  
Technique. Bivariate  
plot of component  
and eigen scores.  
A) variables and B)  
sites.

least diverse in the region. Sites from Groups 1 and 5 and 6 (and the small sample in Group 7) demonstrate considerable diversity in subject preference and techniques used.

And the technique variables reveal different levels of homogeneity than do the motif variables. The variability demonstrated by technique variables is less than that demonstrated by motif variables showing that there is a higher degree of technical homogeneity across the region than there is similarity in subject preference.

Subtle differences between the sites in the different groups are shown by the outlier sites. These indicate a preference in some areas of the Basin for hand stencilling (Groups 1, 2 and 5), while in other areas (Groups 3 and 6), the drawing of land animals in black pigment is most common.

### *Language Areas*

As was done with the engraving sites, the shelter art assemblages were divided into language areas based on Capell's boundaries (Figure 3.1).

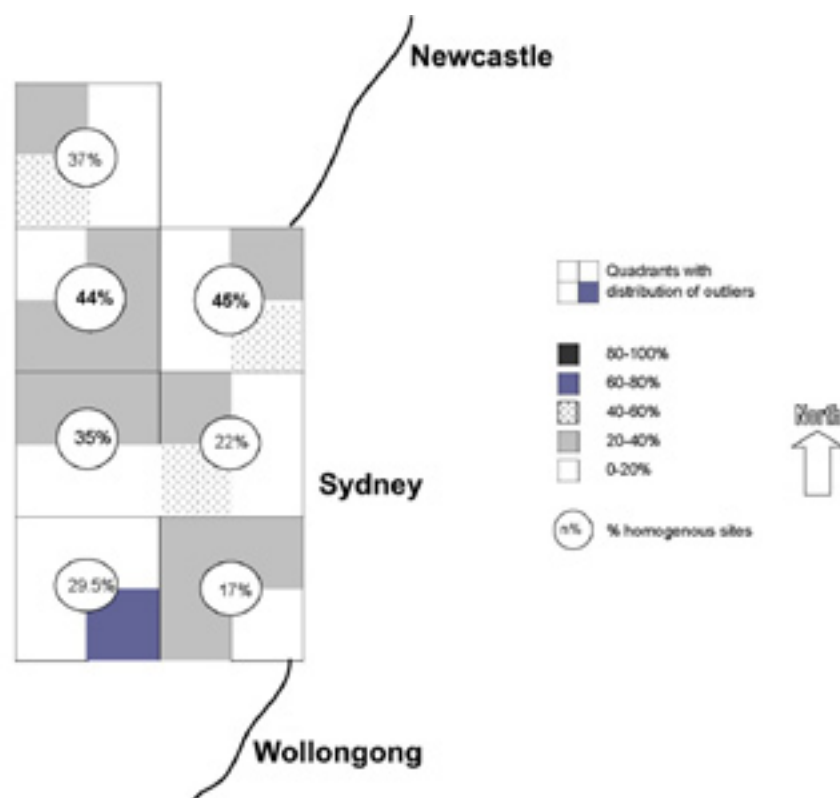


Figure 12.6: Shelter Art, Motif. Percentages of homogeneous shelter art sites in each analytical group.

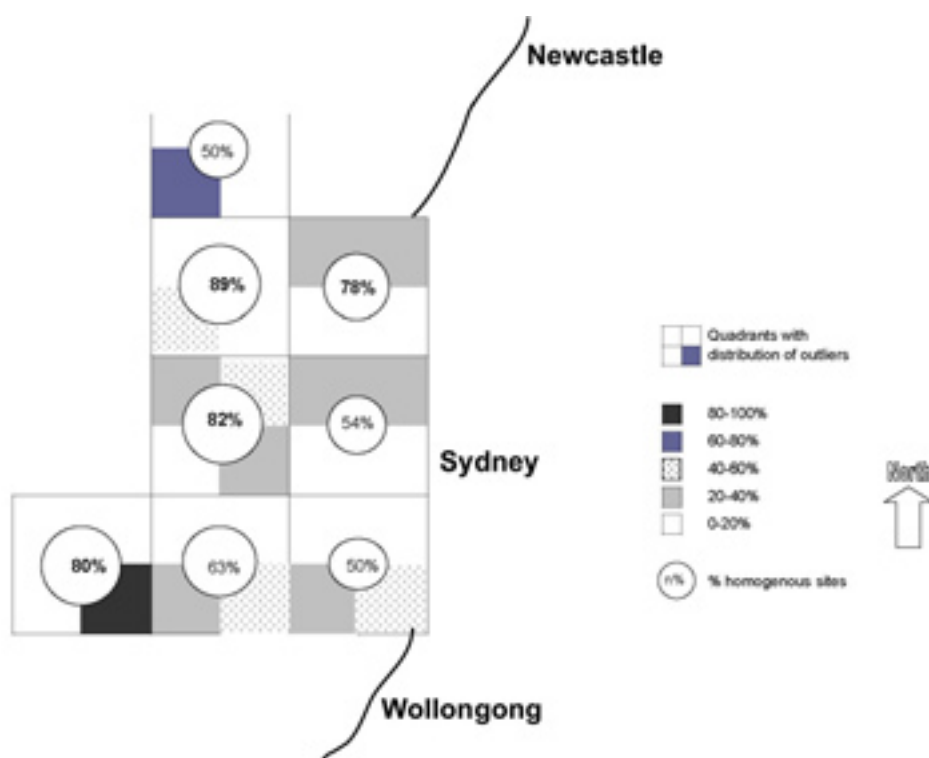


Figure 12.7: Shelter Art, Technique. Percentage of homogeneous shelter art sites in each analytical group.

### *Motif and Technical Variation across the Basin*

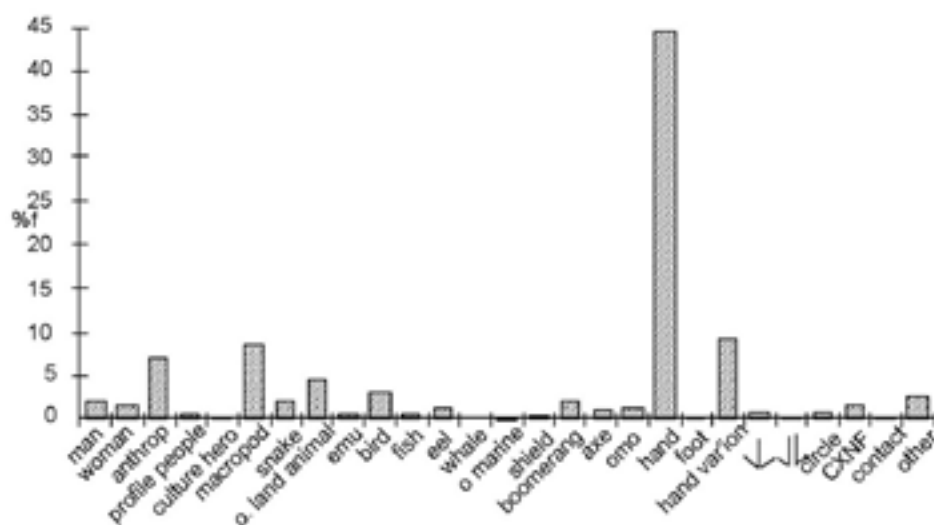
Basic assemblage details (motif and technique) and the CA results are described for each of the language areas.

Much of the shelter art assemblage is unidentifiable due to poor preservation, *ad hoc* drawing activity, superimpositioning and the requirements of the classification system. The technique variables recorded included unidentifiable motifs, which results in a more accurate picture of technical ranges used across the region. Because of this, there is not always a correlation between motif proportions and technique characteristics: i.e., while hands might dominate the identifiable motifs, stencilling does not necessarily dominate in technique.

#### *Darkingung Language Area*

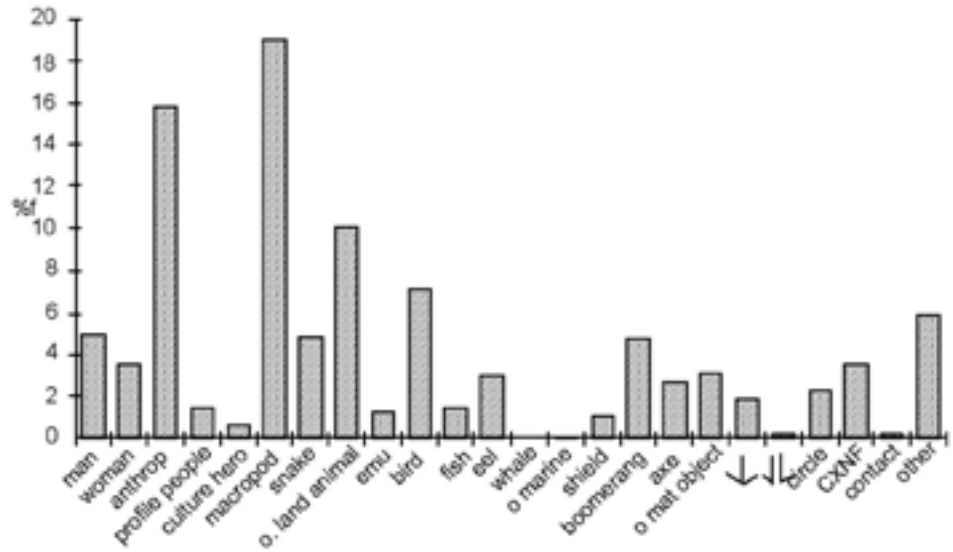
This group of inland shelter art sites represents the largest sample in the region (190 sites). While 7,725 motifs were recorded here, only 4,972 motifs could be classified: 30% of the assemblage comprises unidentified motifs. The largest recorded assemblages in the region are located here (average 41 motifs/site) as are the two biggest known assemblages: Swinton's with 857 motifs and Yengo 1 with 505 motifs. The average site size is quite high (34 motifs/site) even if these two sites are excluded.

The predominant motif is the hand (54%: Figure 12.8). The focus of the depictive motifs (Figure 12.9) is on macropods (19%) followed by anthropomorphs (16%) and other land animals (10%).



**Figure 12.8: *Darkingung* Language Area, Motif Assemblage (excluding unidentified motifs).**



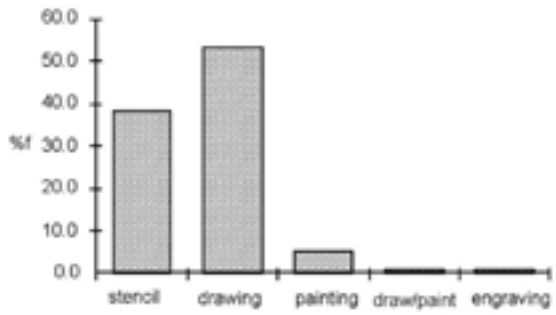


**Figure 12.9: Darkingung Language Area: depictive motifs.**

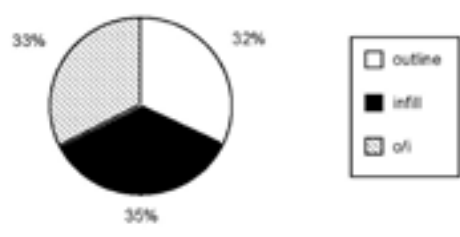
The whale is the only motif category not represented here. Non gendered anthropomorphs are the most commonly depicted human figures, followed by men and then women. Profile depictions are fairly uncommon. Most of the pigment culture heroes are located in this area. Boomerangs are the most commonly depicted material culture items. Despite the fact that hands dominate the recognisable motifs here, dry pigment (drawing) is the most commonly employed technique. Stencilling is common. Wet pigment (painting) is more common here than in any other language area (Figure 12.10).

Infilled motifs are slightly more common than the other two forms although all three are roughly equivalent (Figure 12.11).

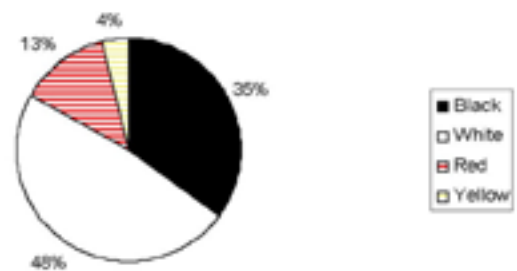
The clear colour preference in this area is white pigment, followed by black, red and yellow (Figure 12.12).



**Figure 12.10: *Darkingung* Language Area. Techniques employed.**



**Figure 12.11: *Darkingung* Language Area depictive motifs. Form.**



**Figure 12.12: *Darkingung* Language Area. Colour usage.**



## Darug Language Area

This language area is also located inland and sites were split into two groups - north and south of the Cumberland Plain, testing the posited language boundaries here. In the northern area a total of 1,297 motifs were recorded from 36 sites. Only 851 of these were recognisable (34.4% unidentifiable). Average site size here is quite large (36 motifs/site). Hand stencils (including variations) dominate this assemblage (Figure 12.13).

‘Other’ dominates the depictive motifs followed by birds and other land animals. Human figures are again focused on non-gendered anthropomorphs, and there is a greater emphasis on profile figures than in the *Darkinjung* assemblage (Figure 12.14).

Two culture heroes (at two sites) are located in this area. Drawing is the most commonly used technique followed by stencilling. The other technical options are less common (Figure 12.15).

The three defined forms are relatively evenly distributed (Figure 12.16) with infilled motifs slightly more common than the other two forms

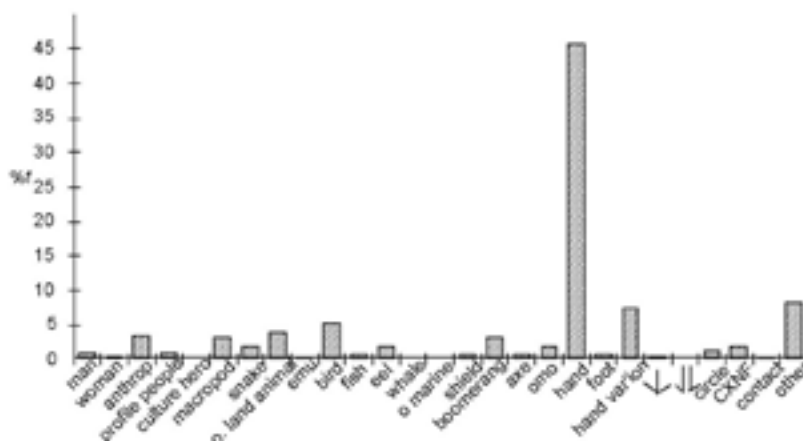


Figure 12.13: *Darug* (North) Language Area. Motif assemblage.

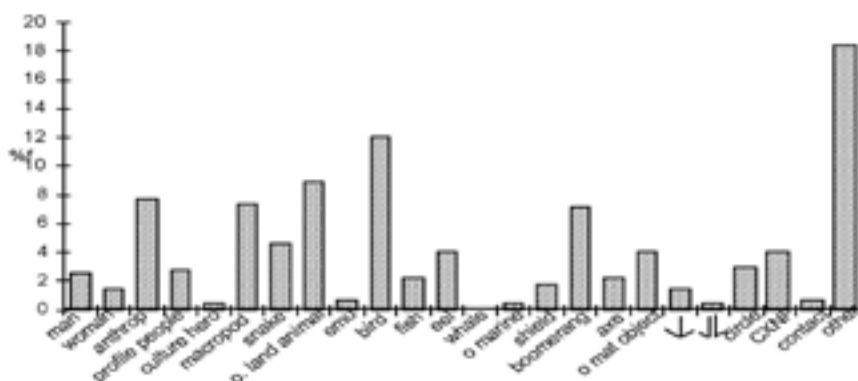
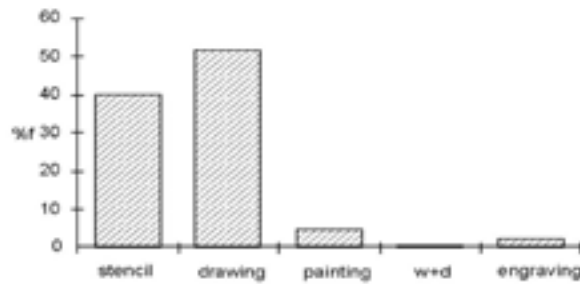
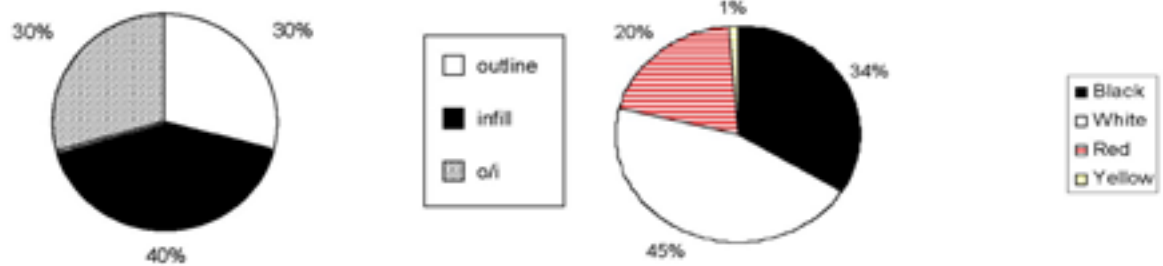


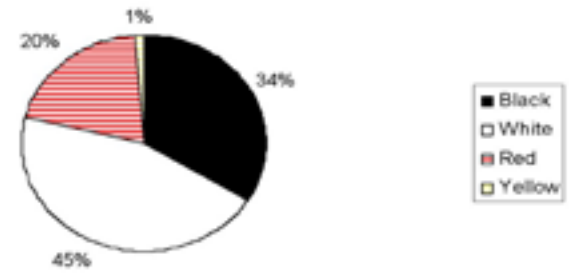
Figure 12.14: *Darug* (North) Language Area. Depictive Motifs.



**Figure 12.15: *Darug* (North) Language Area. Technical options employed.**



**Figure 12.16: *Darug* (North) Language Area depictive motifs. Form.**



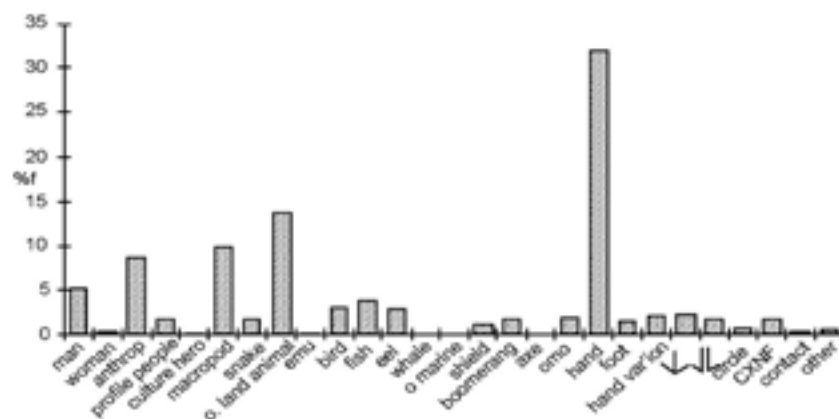
**Figure 12.17: *Darug* (North) Language Area. Colour preferences.**

Colour preference in this area is again for white pigment, followed by black, red and yellow (Figure 12.17). Red is more common and white less dominant than in the *Darkingung* sample.

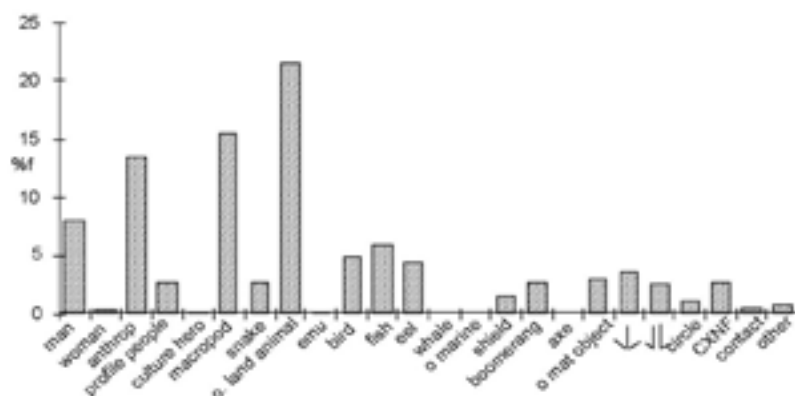
The southern *Darug* sample comprised 90 sites with 1,613 motifs. Only 722 of these were recognisable (55.2% unidentified). The average site size here is 17.9 motifs/site.

Hands again dominate but less so than in the preceding groups (Figure 12.18). Unlike the northern *Darug* sample, the dominant depictive motifs are other land animals followed by macropods and anthropomorphs. Culture heroes and women are present but extremely rare. 'Other material objects' are the most commonly depicted material culture items, followed by boomerangs (Figure 12.19).

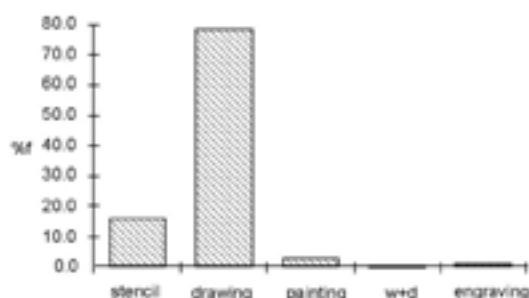
Drawing is the most common technique. Stencilling is much less common, while the remaining technical options are uncommon or non-existent (Figure 149). Technical variability is much more limited in this *Darug* group compared with its northern counterpart. Outline and infilled motifs are more common here than outline only motifs. Infilled forms are quite rare (Figure 12.21).



**Figure 12.18: *Darug* (South) Language Area. Motif Assemblage.**

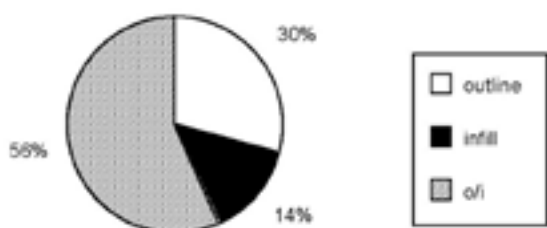


**Figure 12.19:**  
***Darug* (South)**  
**Language Area.**  
**Depictive Motifs.**

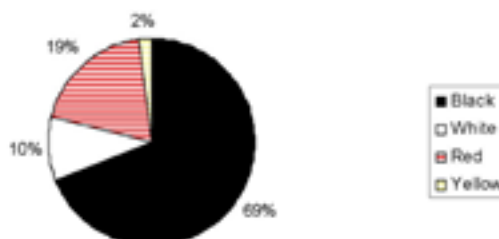


**Figure 12.20:** *Darug* (South) Language Area. Technical options employed.

Colour preferences here are very different to the more northerly groups. Black is the preferred colour followed by red, white and yellow (Figure 12.22).



**Figure 12.21:** *Darug* (South) Language Area. Form.



**Figure 12.22:** *Darug* (South) Language Area. Colour preferences.

### *Guringai* Language Area

This sample represents the most northerly coastal group in the region. A total of 1,504 motifs were recorded from 78 sites here. Just over 38% of this assemblage was unidentifiable; 930 motifs were classifiable. The average site size here is 19.3 motifs/site, considerably smaller than the northern inland groups.

Hands dominate this group (Figure 12.23), while fish and macropods are co-dominant in the depictive assemblage (Figure 12.24). There are no culture heroes or profile people amongst the anthropomorphic figures here. Boomerangs are the most frequently depicted material objects followed by shields.

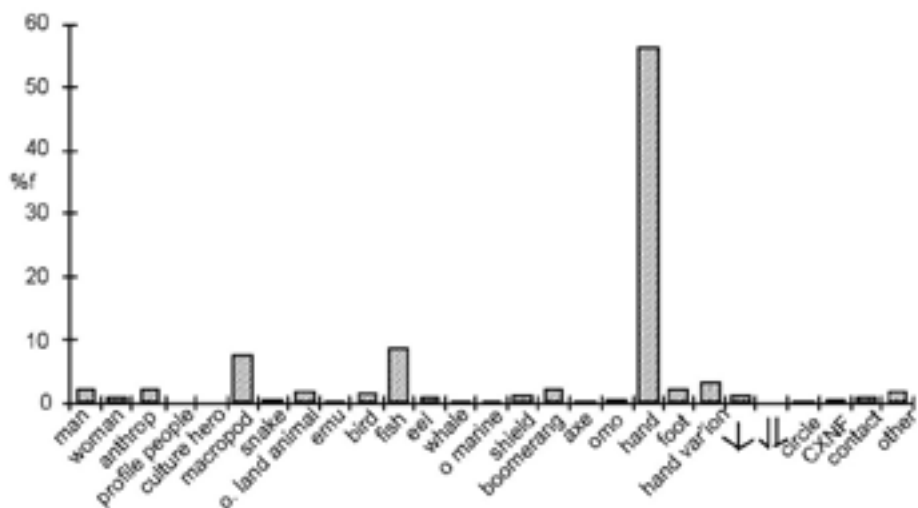


Figure 12.23: *Guringai* Language Area. Motif Assemblage.

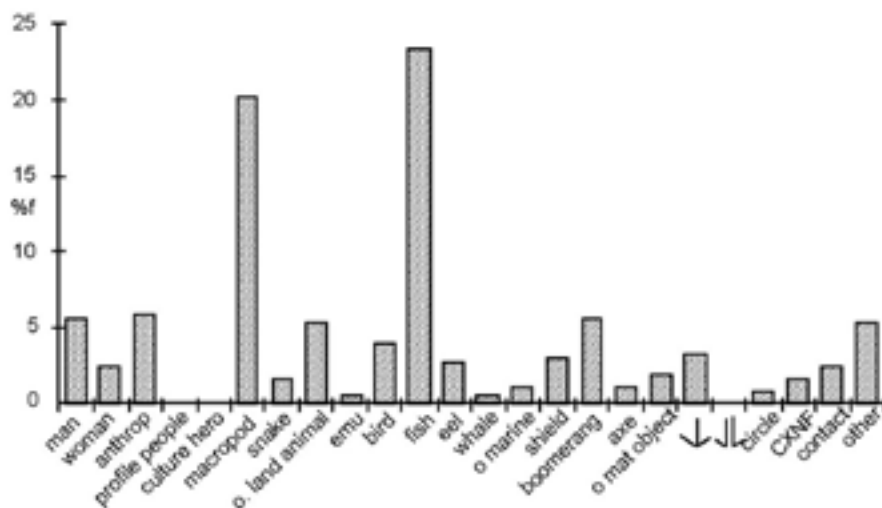


Figure 12.24: *Guringai* Language Area. Depictive Motifs.

Drawing and stencilling are co-dominant techniques (Figure 12.25). Painting is relatively common. Outline and infilled motifs are the preferred form followed by infilled and outline-only motifs (Figure 12.26). The preferred colour in this area is black, followed by white and red. Yellow is rarely used (Figure 12.27).

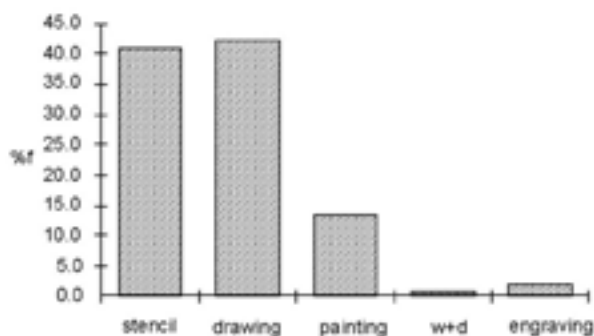


Figure 12.25: *Guringai* Language Area. Technical options employed.

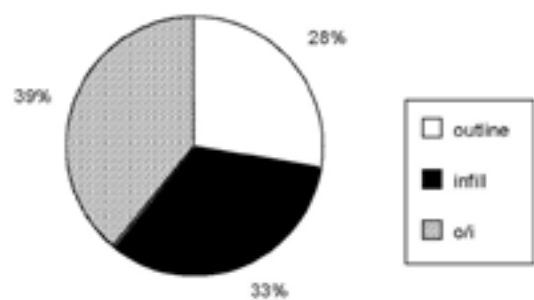


Figure 12.26: *Guringai* Language Area depictive motifs. Form.

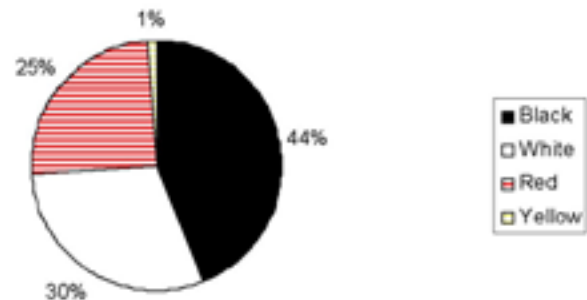


Figure 12.27: *Guringai* Language Area. Colour preferences.

Sydney (*Eora*) Language Area

This language group is located, south of the *Guringai* and Port Jackson and north of the Georges River. This group has the smallest sample size (five sites) because of the focus in this area of European settlement, and because of the Cumberland Plain.

A total of 65 motifs were recorded here (averaging 13 motifs/site). Relatively few of the motifs (11%) were unidentifiable: 58 were recognisable.

Hand stencils dominate this assemblage, while the depictive focus is on fish and other marine animals (Figure 12.28, Figure 12.29). There is a much reduced motif classification for this area probably as a result of sample size.

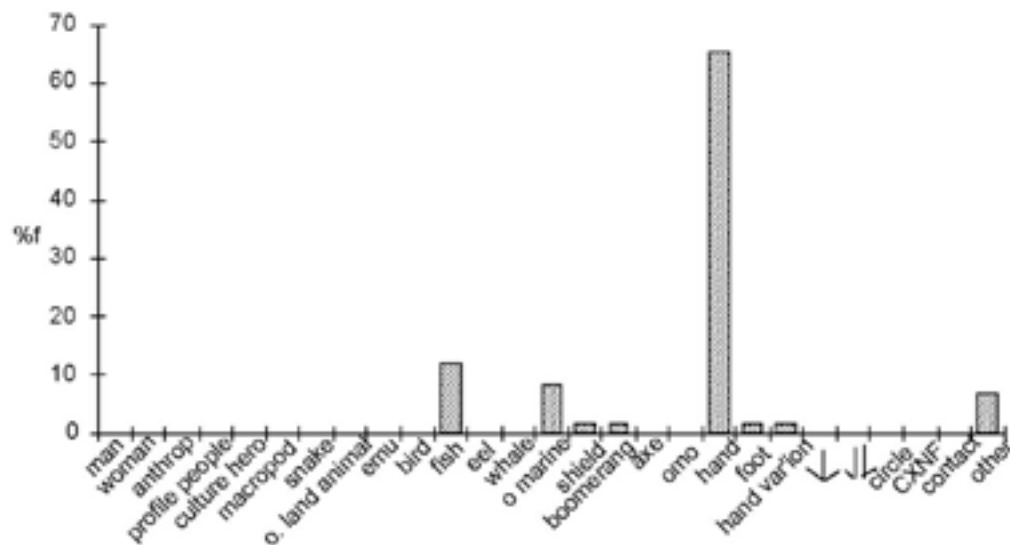
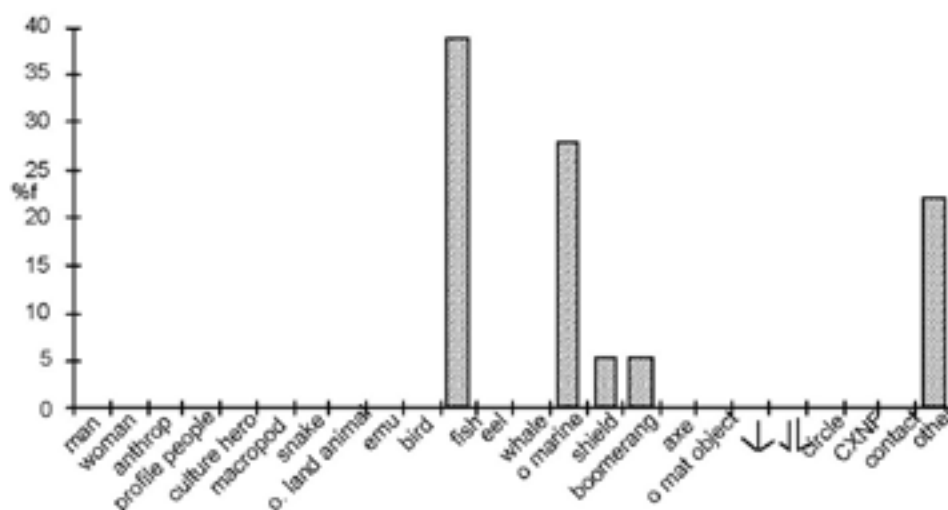
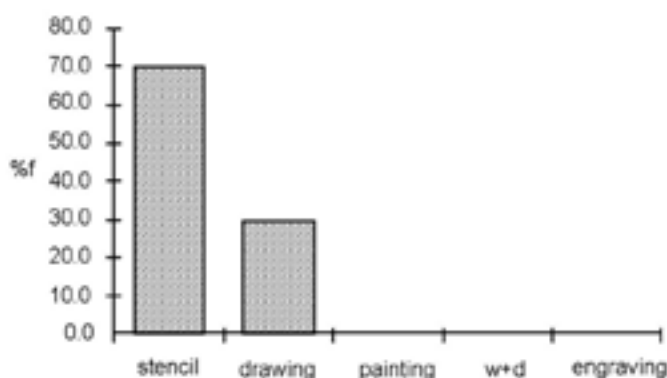


Figure 12.28: *Eora* Language Area. Motif Assemblage.

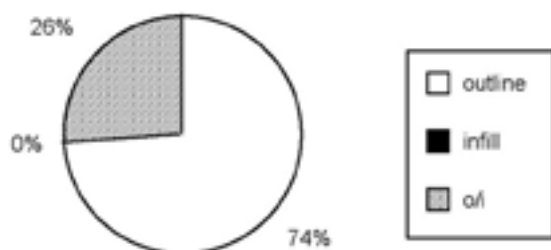


**Figure 12.29: Eora Language Area. Depictive Motifs.**

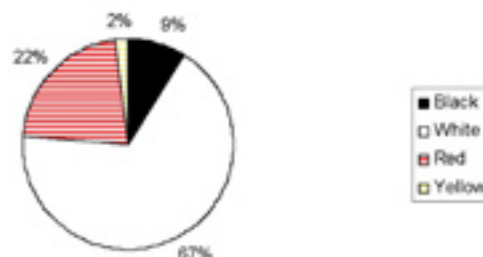
Stencilling dominates this assemblage, with drawing the only other recorded technique (Figure 12.30). Small sample size again makes these observations tentative. There is a preference for outline motifs followed by outline and infilled forms. No infilled-only forms were recorded in this area (Figure 12.31). The preferred colour in this area is white, followed by red, black and yellow (Figure 12.32).



**Figure 12.30: Eora Language Area. Technical options employed.**



**Figure 12.31: Eora Language Area depictive motifs. Form.**



**Figure 12.32: Eora Language Area. Colour preferences.**

### Tharawal Language Area

This area is also located largely on the coast, south of the Georges River. A total of 2,387 motifs were recorded here from 99 sites. A high proportion (58%) of this assemblage is indecipherable; there were 1,005 recognisable motifs. The sites here are of average size (24.1 motifs/site).

This is the only area in the region where hands do not predominate the recognisable motifs (Figure 12.33). Macropods and hands are co-dominant. When hands are excluded, macropods dominate the depictive motifs followed by other land animals, anthropomorphs and birds (Figure 12.34). Profile anthropomorphs occur here as commonly as they do in the *Darug* (north and south) assemblages. Women and culture heroes, however, are extremely rare.

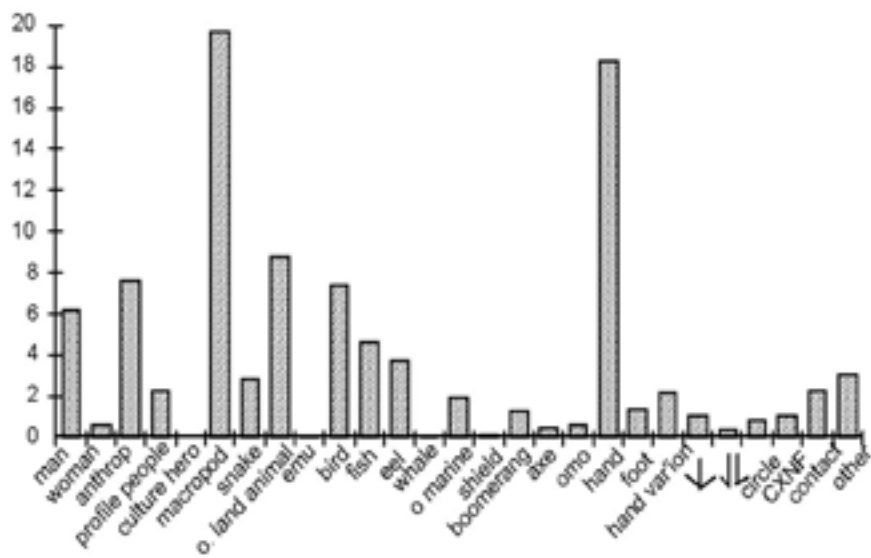


Figure 12.33: *Tharawal* Language Area. Motif Assemblage.

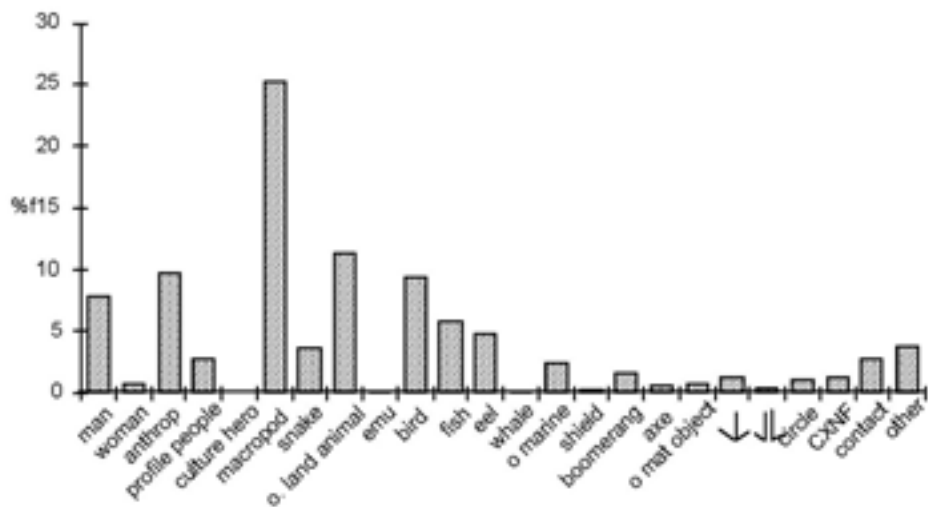


Figure 12.34: *Tharawal* Language Area. Depictive Motifs.

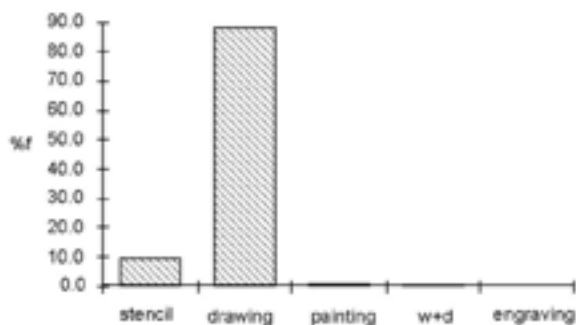
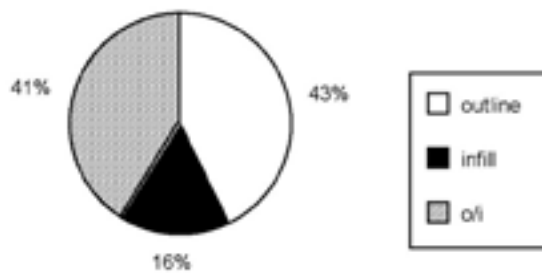


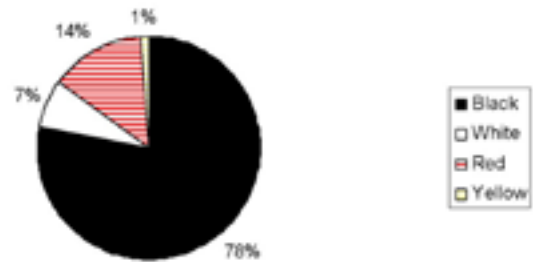
Figure 12.35: *Tharawal* Language Area. Technical options employed.



The drawing technique dominates this assemblage, with stencilling relatively uncommon (Figure 164). Painting (alone and in combination) is rare - as is engraving. Outlined motifs and outlined and infilled forms are the most common, while infilled only forms are less common (Figure 12.36). Black is the predominant colour, followed by red, white and yellow (Figure 12.37).



**Figure 12.36: Tharawal Language Area depictive motifs. Form.**



**Figure 12.37: Tharawal Language Area. Colour preferences.**

### Summary

Pigment art assemblages in the *Tharawal* language area are clearly differentiated from all other language areas by the relative absence of hand stencils. There is a predominance of black pigment and scarcity of white pigment in this area, which further reinforces these differences. All other areas have varying levels of similarity and dissimilarity in their motif assemblages.

Despite their locations on the coast, there is no clear focus on marine animals in the *Guringai* or the *Tharawal* areas. Several motif classes are ‘missing’ from the central area of the Basin but present the northern and southern parts of the region. Profile people are common in the *Darkungung* and northern *Darug* sites and the southern *Darug* and *Tharawal* sites. None of these motifs are found in the *Guringai* or Sydney areas.

Viewing the *Darug* sites north and south of the Cumberland Plain separately revealed that some bedrock design notions (Sackett 1990) transcend the geographic distance between these two assemblages, while others do not. Both sets of *Darug* sites have a predominance of hand stencils with other land animals, macropods and anthropomorphs dominating (compared with *Tharawal* sites that have few hand stencils and are clearly dominated by macropods). Distance has created some differences in assemblage characteristics between the two sets of *Darug* sites. Birds, ‘other’ and boomerang motifs dominate in the northern group, while these elements are less important in the southern group. The schematic peculiarity of these southern sites (i.e. the use of four leg on terrestrial animals and two legs on birds, cf. two and one used, respectively, to the north) occurs in both the southern *Darug* and *Tharawal* sites, but not the northern *Darug* sites. This aspect has not been investigated in detail here.

Unidentified motifs were used in this analysis because of the technical information they provide. Without exception this category dominates all shelter art assemblages.

Colour usage in the different language areas reveals definite cultural preferences across the region. This preference does not reflect availability of resources. Charcoal is universally available. White pigment derives from pipeclay (kaolin) commonly found in creeklines around the region and would require only a local knowledge to procure. Red and yellow pigments derive from ironstone bedding within the sandstone formation. While requiring local knowledge to procure, these colours are ubiquitous in their distribution.

In the south of the region there is a definite preference for black pigment and a lesser focus on stencilling. In the north of the region there is a definite focus on white pigment. While this reflects the dominance of stencilling, there are also large numbers of white drawings and paintings in this area. This colour dominance supports a model of contact between the Hunter Valley (where white is prevalent) and this part of the Sydney region (Moore 1981; and see the Mount Yengo excavation report).

In the *Guringai* area, while black dominates, there is a much more use of red and white. Red is commonly used for stencilling here as well as for drawing.

Yellow is only rarely used in all language areas, although it is used more frequently in the *Darkingung* area. There are many sites with yellow stencils in this area, but relatively few drawings and paintings (except in the Warre Warren area: McDonald 1988a).

### Correspondence Analysis, Language Areas and Drainage Basins

While trends in the motif assemblages and technical options across the Basin are quite clear, the CA results were used to interpret the significance of compositional differences and technical emphases in the different areas. Language areas and internal drainage basins were analysed, first for motif and then technique.

A total of 25 drainage basins with art sites were defined. The codes used here are the same as those used for the engraved assemblage (Table 12.4 and Table 12.5). The sample sizes here vary markedly compared with the engraved component. The largest sample of shelter sites derives from the *Darkingung* language area. This distribution reflects the work done in the Mangrove Creek Catchment (Attenbrow 1981, 1987, Gunn 1979, McDonald 1988a) and more broadly for the Rock Art Project (McDonald 1987, 1990a).

**Table 12.4: Shelter Art sites (motif): Language areas, codes and sample sizes.**

Language Group	Code	No. of sites
<i>Darkingung</i>	1	190
<i>Guringai</i>	2	78
Sydney	3	5
<i>Darug</i>	4	97
<i>Tharawal</i>	5	99

As for the engraved component's analysis, the following sample areas were used. These explored:

- 1) Intra-language area patterning within the *Darkingung* language area (drainage basins 1, 5 and 6);
- 2) East-west patterning across the proposed *Guringai/Darug* language boundary south of the Hawkesbury River (drainage basins 10 - 13); and,
- 3) The east-west patterning across the proposed *Tharawal/Darug* language boundary (drainage basins 18 - 21) south of the Georges River.

### *Shelter Art Motifs*

The CA sample for the motif analysis comprised 469 sites. Sites with only unidentifiable motifs were excluded from these analyses. The CA results are shown here, with the sites plotted in their respective drainage basins and language areas.

The bivariate plots show both language areas and drainage basins. Core homogeneity is indicated and the distribution of outlier sites is shown using the quadrant method described.

#### *1) Darkingung Language Area (drainage basins 1, 5 and 6)*

This group of sites is north of the Hawkesbury River and includes on the major drainage basins of the Macdonald River and Mangrove Creek. The Upper Macdonald and central Macdonald were distinguished by their position relative to the Bala Range at its centre. The Bala Range forms part

of a documented access route (Mathews 1899) along the Boree Track and what is now the Putty Road.

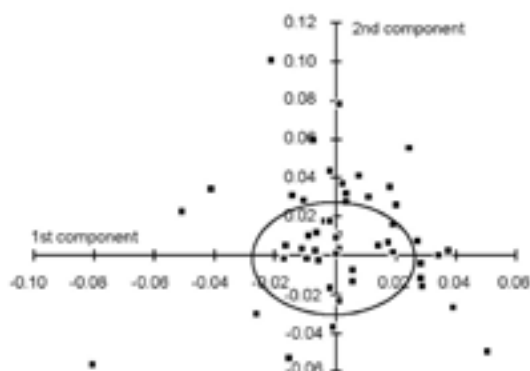
**Table 12.5: Shelter Art sites (motif): Drainage Basins, Language Areas and Sample sizes.**

Drainage Basin	Basin Code	Lang. Group	No. of sites
Upper Macdonald	1	1	19
Wollombi	2	1	9
Wyong	3	1/2	4/3
Colo	4	1	17/1
Central Macdonald	5	1	54
Mangrove Creek	6	1	84
Mooney Mooney	7	1/2	1/1
Brisbane Waters	8	2	5
Kurrajong	9	1/4	2/3
Cattai	10	1/4	-/6
Berowra	11	2/4	12/20
Cowan	12	2	29
Pittwater	13	2	8
Middle Harbour	14	2	14/1
Lane Cove	15	2/4	6/2
Port Jackson	16	3	4
Botany Bay	17	3	1
Port Hacking	18	5	5
Woronora	19	5	55
Mill/Williams	20	4/5	17/1
Georges	21	4/5	33/7
Nepean	22	4	1
Burraborang/Blue Mtns	23	4*/5	15/10
Cataract	24	4*/5	-/14
Avon/Cordeaux	25	4*/5	-/7

\*May be mixture of *Darug* and *Gandangara* Language areas

### *Darkingung*

The 157 sites in this group are homogeneous, with a heavy emphasis on anthropomorphs, terrestrial animals and birds and stencilled hands and weapons (Figure 12.38).



**Figure 12.38: *Darkingung* Language Area. Bivariate plot of CA scores: motifs.**

The three drainage basins show consistency in their core homogeneity (Figure 12.39), but clinal variation in motif focus.

Upper Macdonald

	Outliers	
Core: 42.1%	18.2%	18.2%
	54.5%	9.1%

This group of 19 sites is relatively homogeneous with a strong emphasis on hands. Most of the sites in the negative quadrant comprise hand-only sites.

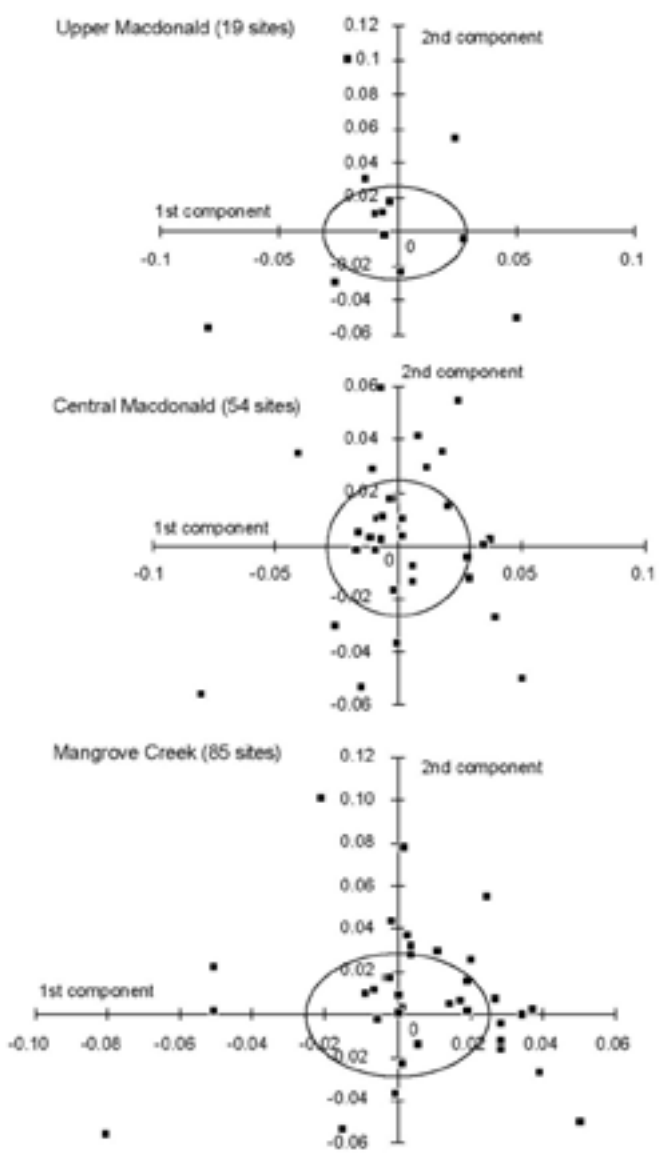


Figure 12.39: *Darkingung* Language Area: Motif. Bivariate plots for the three drainage basin groupings.

**Central Macdonald**

	Outliers	
Core: 44%	10%	22.3%
	<b>33.3%</b>	<b>33.3%</b>

This group of 54 sites is also quite homogenous, with the outlier focus on the negative side of the second component. Again there is a strong emphasis on hand stencils and on anthropomorphic figures. Macropods and other land animals figure strongly, as do birds and other material objects. Many sites contain complex-non-figurative motifs.

**Mangrove Creek**

	Outliers	
Core: 45%	8.5%	25.5%
	12.2%	<b>53.2%</b>

This group of sites has a similar degree of homogeneity to the Central Macdonald sites, with a decreasing emphasis on hands (i.e. a shift in focus to quadrant C). Anthropomorphs, terrestrial animals, material objects and birds figure strongly. Eels and fish also occur frequently. Other motifs occur quite often in quadrant C sites and many of these sites include small numbers of hand and weapon stencils.

*2) East-west patterning Guringai/Darug language boundary (drainage basins 10 - 13)*

The boundary between these two language areas is Berowra Creek. Both banks of this estuarine waterway were surveyed for the Rock Art Project (McDonald 1990b). For the purposes of testing this defined boundary, the sites are divided according to their location on left or right bank of Berowra Creek. This analysis indicates that the sites on either side of the creek have motif differences (Figure 12.40).

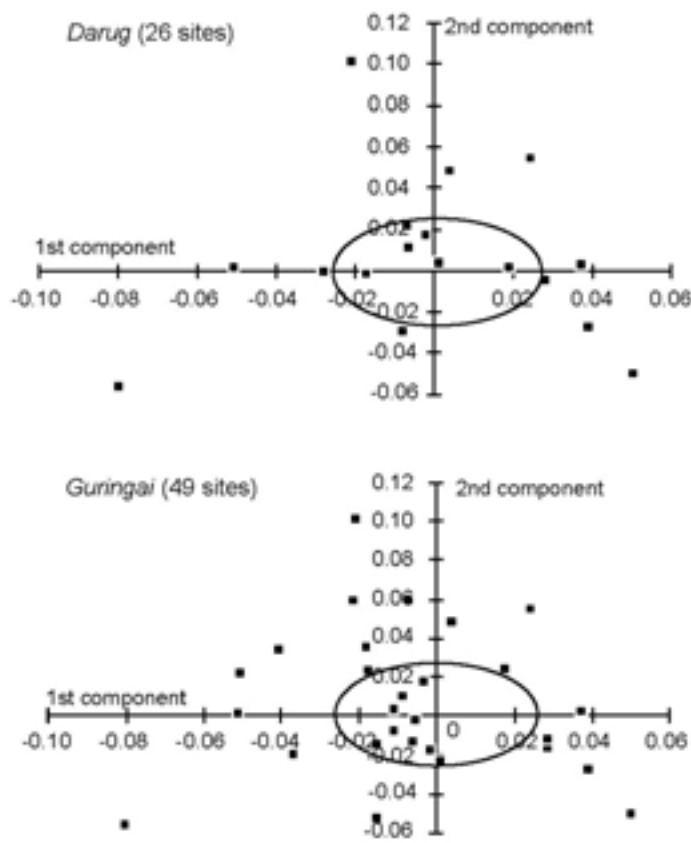
The *Darug* sites are more homogeneous than the *Guringai* sites. There is also a change in focus between the outlier sites in the two areas, with more human figures, land animals and birds occurring in the former and more hands occurring in the latter. There is considerable variability within these groups, based on drainage basins.

***Darug***

	Outliers	
Core: 46%	14.3%	14.3%
	29.6%	<b>42.8%</b>

**Guringai**

Core: 29%	Outliers	
	22.8	8.6%
	51.4%	17.1%



**Figure 12.40: Darug and Guringai Language Area: Motif. CA scores.**

**Cattai:**

Core: 50%	Outliers	
	33.3%	66.6%
	0%	0%

This area has only six sites, and its results are thus treated tentatively. Three sites (50%) are in the core zone and all of the outlier sites are on the positive side of the 2nd component (and contain other land animals and other material objects).

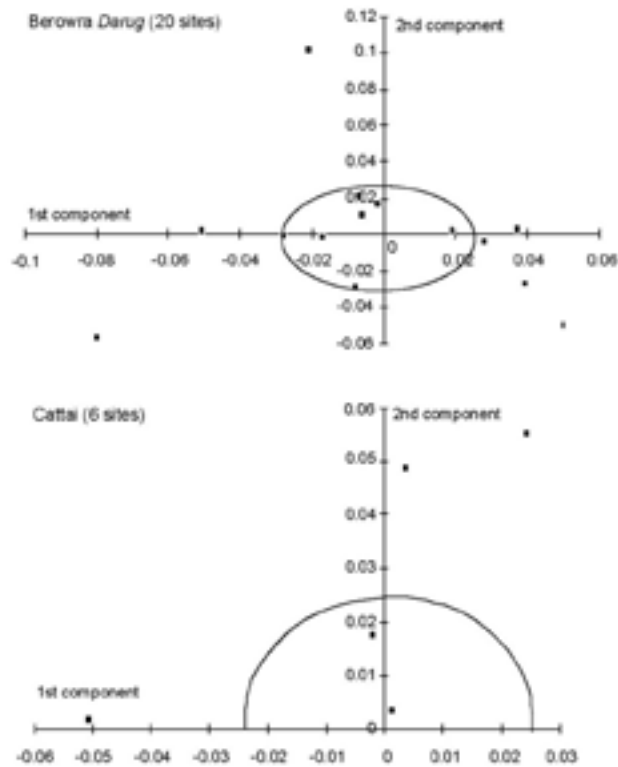


Figure 12.41: *Darug* drainage basins: motifs. Bivariate plot of CA scores.

***Darug* Berowra:**

	Outliers	
Core: 45%	9.1%	0%
	36%	55%

This group of 20 sites are on the left bank of Berowra Creek. These sites are quite homogenous (Figure 12.41), with the main outlier focus in quadrant C and a minor focus in quadrant D. Quadrant C sites have a focus on terrestrial and anthropomorphic depictions. There are lots of sites with single macropods. Stencils (hand and weapons), land animals and eels dominate quadrant D sites.

***Guringai* Berowra:**

	Outliers	
Core: 25%	22%	11%
	33%	33%

This group of 12 sites is considerably less homogeneous than those on the western bank of Berowra Creek (Figure 12.42). The focus of its outlier sites is also different: more on the negative side of the second component with hand stencils and eels (quadrant D), and anthropomorphs, macropods and other land animals (quadrant C).



Cowan

Core: 34.5%	Outliers	
	26%	11%
	53%	11%

This group of 29 sites is quite heterogeneous but is focussed on the negative side of the first component. The main compositional focus here is on hands, hand variations and fish (quadrant D) and on marine, terrestrial and other material objects (quadrant A).

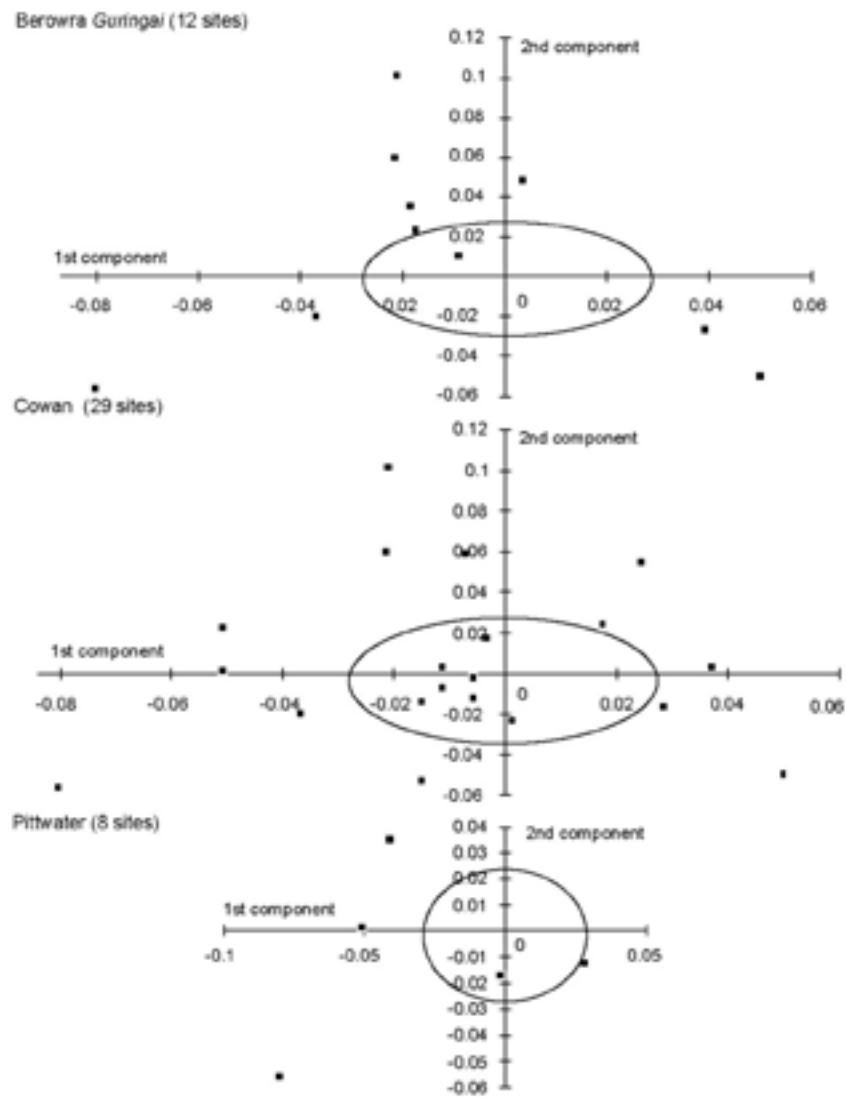


Figure 12.42: *Guringai* drainage basins: motif. Bivariate plot of CA scores.

Pittwater

Core: 12%	Outliers	
	14%	0%
	71%	14%

This small group of eight sites is the least homogenous of all those analysed in this area. The focus of this group is heavily on hands and other motifs. The Great Mackerel site with a large assemblage of mainly hand and material object stencils is the outlier site in quadrant A.

3) *The Tharawal language area (Basins 18 - 21)*

This group involves 118 sites south of the style boundary at the Georges River. These sites fall within Capell’s designated *Tharawal* and *Darug* language group areas. The shelter art sites are mainly from the Georges River and Woronora catchments, unlike the engraving sites - which have a coastal focus.

***Tharawal***

Core: 33.8%	Outliers	
	6.7%	13.3%
	15.5%	<b>64.4%</b>

This group of sites is one of the least homogenous of those analysed according to language area (Figure 12.43).

***Darug***

Core: 28%	Outliers	
	5.5%	11.1%
	19.4%	<b>63.9%</b>

This group of sites is the least homogenous of those analysed according to language area. There are a few sites with hand stencils in this area, and a definite focus here is on animals and birds.

***Darug Georges River***

Core: 27.3%	Outliers	
	8.3%	16.7%
	16.7%	<b>58.3%</b>

The group of sites in this drainage basin is one of the least homogenous analysed. There are a few sites with hand stencils, but a definite focus on terrestrial animals and birds.

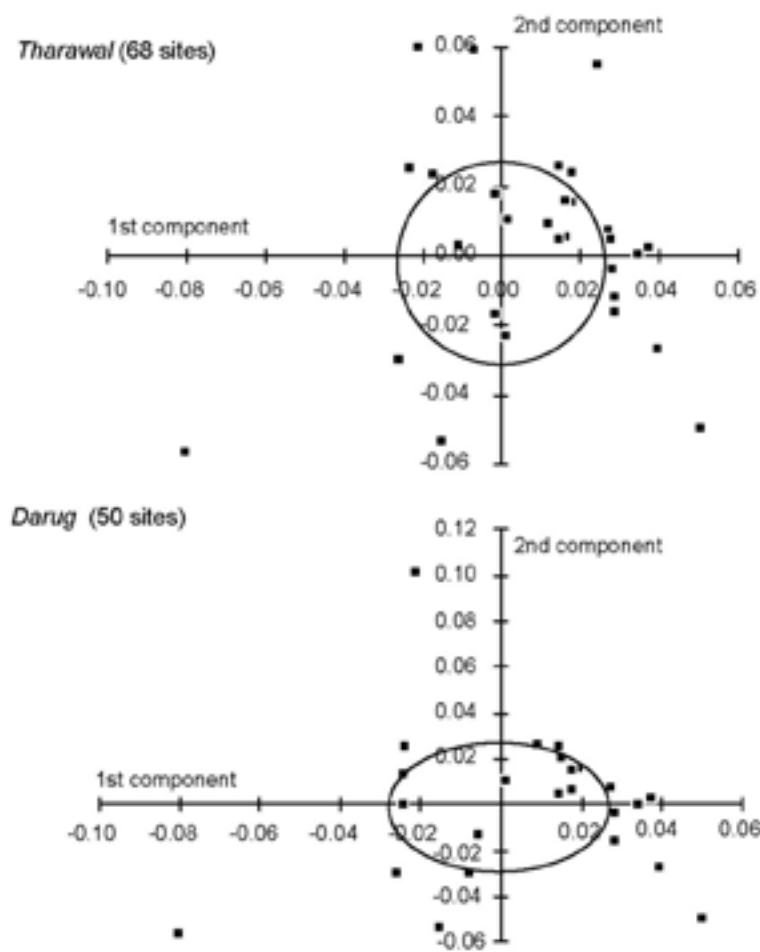


Figure 12.43: *Tharawal* and *Darug* language areas: motif. Bivariate plot of CA scores.

***Darug* Mill and Williams**

	Outliers	
Core: 29.4%	0%	0%
	25%	75%

This group of sites is slightly more homogenous than its neighbouring *Darug* drainage basin but with less diversity in motif preference. There is a definite focus on terrestrial animals, anthropomorphs and birds.

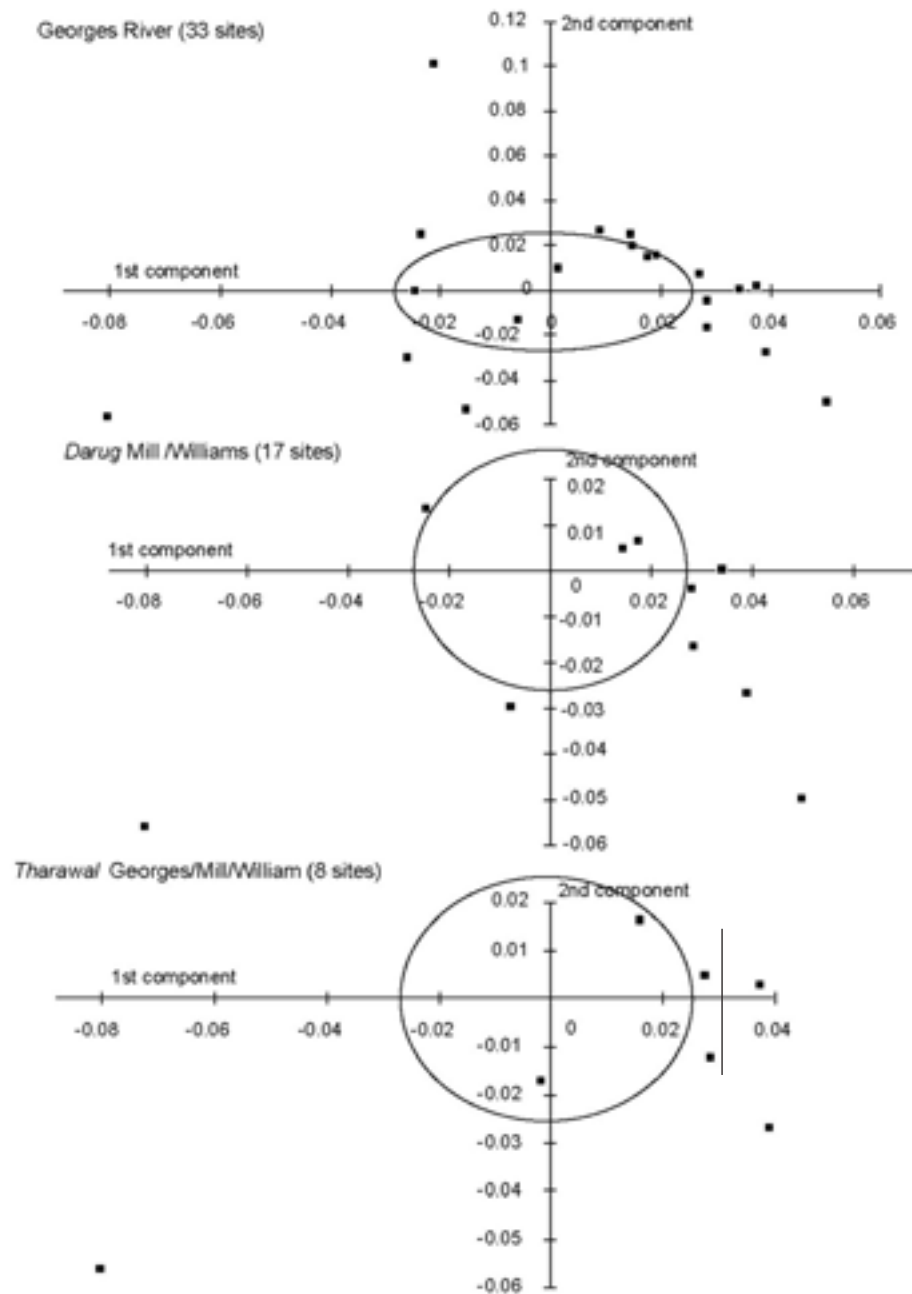


Figure 12.44: *Tharawal* and *Darug* drainage basins: motif. Bivariate plot of CA scores.

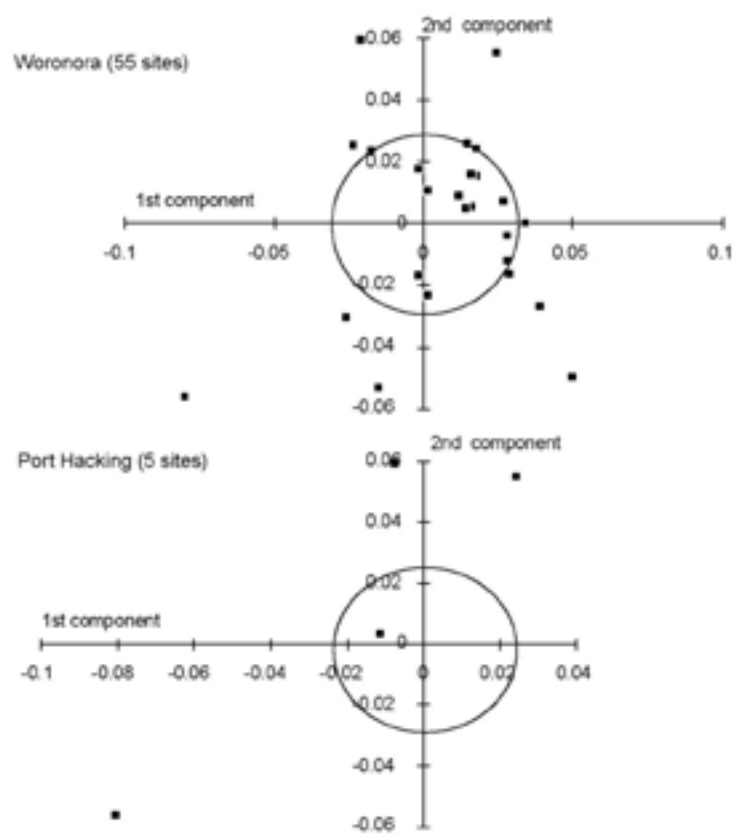


Figure 12.45: *Tharawal* drainage basins: motif. Bivariate plot of CA scores.

*Tharawal* George, Mill and Williams

Core: 37.5%	Outliers	
	0%	20%
	20%	60%

There are too few sites here to meaningfully discuss these results (these are included in the larger language group discussion).

**Woronora**

Core: 34.5%	Outliers	
	5.6%	11.1%
	11.1%	72.2%

This group of sites is more homogenous than the neighbouring *Darug* drainage basins. While there is slightly more diversity in motif preference here, the focus is definitely on terrestrial animals, anthropomorphs and birds.

## Port Hacking

	Outliers	
Core: 20%	25%	25%
	50%	0%

This group is highly heterogeneous and has a different outlier focus to the other *Tharawal* sites. While several sites have hand stencils, there is a definite focus on fish and other marine depictions. The very small number of sites (n=5) makes conclusions regarding this area difficult.

### Summary

Exploring how pigment motifs vary according to defined drainage basins and language areas has again revealed a mosaic of stylistic heterogeneity. The regional core of stylistically homogeneous sites appears to be in the *Darkingung* and northern *Darug* areas. The *Guringai* and southern *Darug* sites are the least homogenous, while the *Tharawal* sites are different again.

Subdividing the language areas into drainage basins provided further insight into localised variability. In the *Darkingung* area, all three drainage basins reveal very similar levels of homogeneity. There is clinal variation here motif preference with a focus on hands in the Upper Macdonald; hand stencils, terrestrial animals and birds in Central Macdonald; and anthropomorphs, terrestrial animals, birds and then hand stencils in Mangrove Creek.

The purported *Darug/Guringai* language boundary south of the Hawkesbury River was investigated. As with the engraved component, a strong separation between sites on either side of Berowra Creek was discovered, supporting the presence of this linguistic boundary. As was also found in the engraving assemblage, similarities between the *Darug* Berowra sites and the *Darkingung* Mangrove Creek sites are striking.

The southern *Darug* and *Tharawal* sites are also highly heterogeneous. Both southern *Darug* drainage basins demonstrate consistently high levels of heterogeneity and similar motif preferences. The *Tharawal* sites however are the most varied of the southern drainage basin with a focus on macropods, other land animals and birds.

### Shelter Art Technique

All 564 shelter art sites were used for these analyses. The same drainage basin and language area divisions are used in these analyses as described above.

#### 1) *Darkingung* language group (drainage basins 1, 5 and 6).

### *Darkingung*

	Outliers	
Core: 68.9%	32.1%	17.9%
	17.9%	32.1%

The sites in this group are relatively homogeneous (Figure 12.46) with a dual emphasis in the outlier sites on engraved motifs and black outlined and infilled motifs (quadrants A and C). There is clinal variation in techniques used between the upper Macdonald and Mangrove Creek groups.

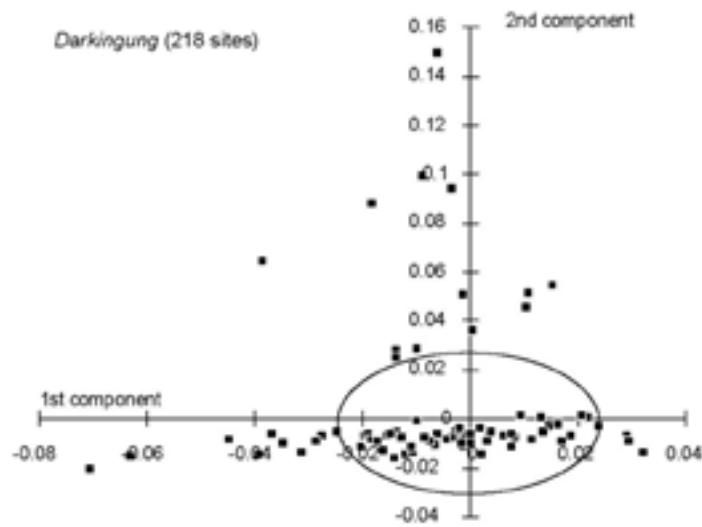


Figure 12.46: *Darkingung* language area: technique. Bivariate plot of CA scores.

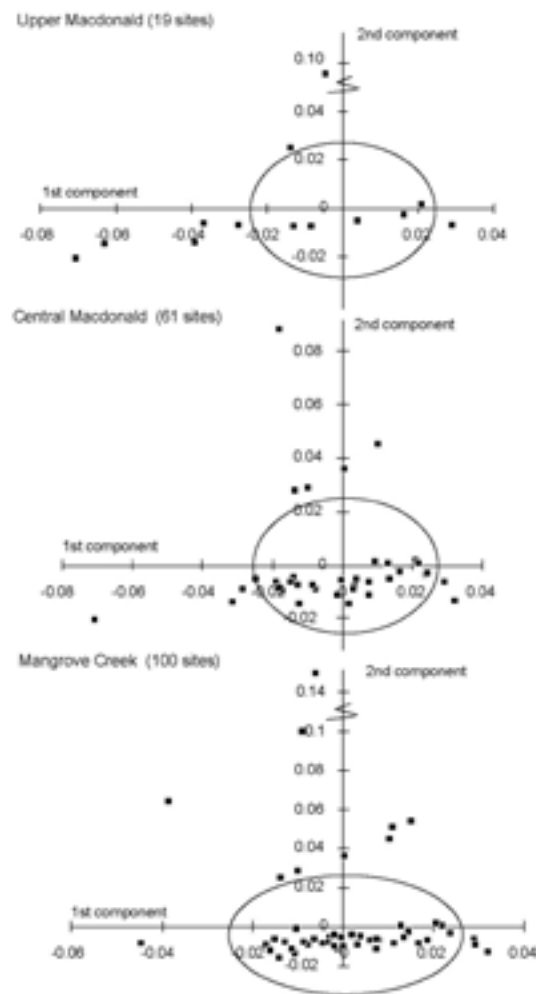


Figure 12.47: *Darkingung* drainage basins: technique. Bivariate plot of CA scores.



**Upper Macdonald**

	Outliers	
Core: 42.1%	36.4%	0
	<b>54.5%</b>	9.1%

This group is relatively homogeneous with the main emphasis on white stencils. A number of sites in this group have engraved motifs.

**Central Macdonald**

	Outliers	
Core: 78.7%	<b>30.8%</b>	<b>30.8%</b>
	<b>23.1%</b>	15.4%

This group of sites is very homogenous with the technical emphasis in outlier sites on engravings, white pigment and stencils.

**Mangrove Creek**

	Outliers	
Core: 68%	<b>31.3%</b>	18.8%
	3.0%	<b>46.9%</b>

These sites are relatively homogeneous but with a decreased emphasis on stencils and white pigment, and increased use of black and red pigments. A number of sites in this group have engraved motifs (quadrant A).

*2) East-west patterning Guringai/Darug language boundary (drainage basins 10 - 13)*

This analysis of technique yet again indicates that the sites on either side of the creek are different.

***Darug***

	Outliers	
Core: 70.4%	12.5%	12.5%
	0	<b>75%</b>

*Guringai*

	Outliers	
Core: 52.5%	20.7%	13.8%
	51.7%	13.8%

The *Darug* sites are much more homogeneous than the *Guringai* sites (Figure 12.48). There is a change in outlier focus between the two areas, with more black pigment in the *Darug* sites and more stencils and white pigment in the *Guringai* sites. The drainage basins indicate a complex mosaic of technical options being used. Engraved motifs occur in both areas, but less so in the *Darug* assemblage.

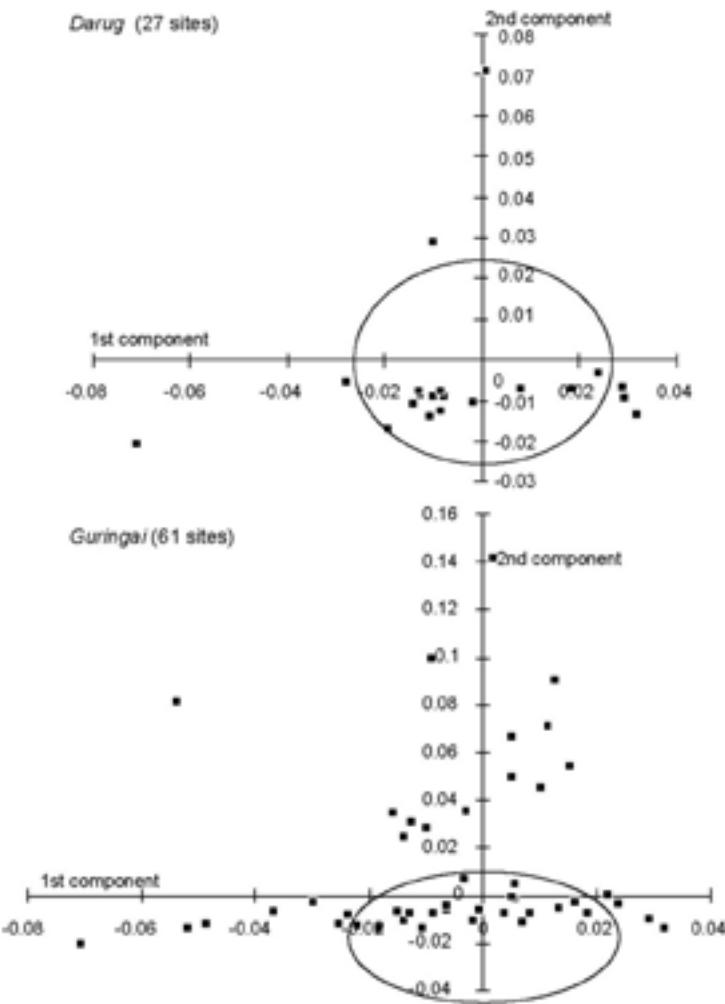


Figure 12.48: *Darug* and *Guringai* language areas: technique. Bivariate plot of CA scores.

Cattai

Core: 83.3%	Outliers	
	0%	100%
	0%	0%

This area has a very low number of sites and thus the results are treated tentatively. Five of the six sites are in the core zone and the only outlier site is in quadrant B.

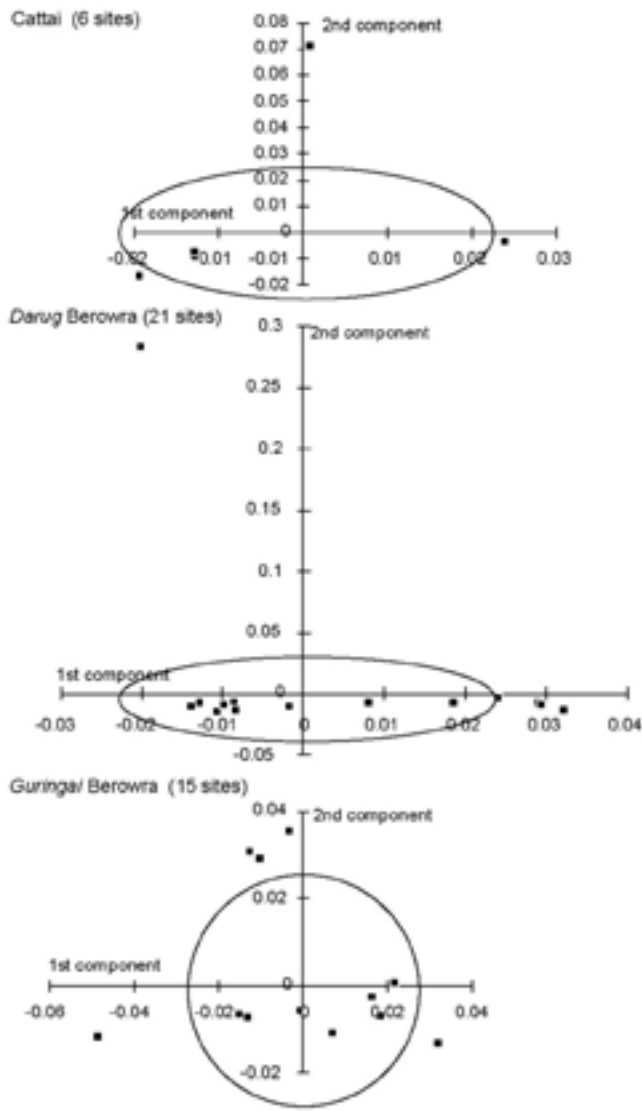
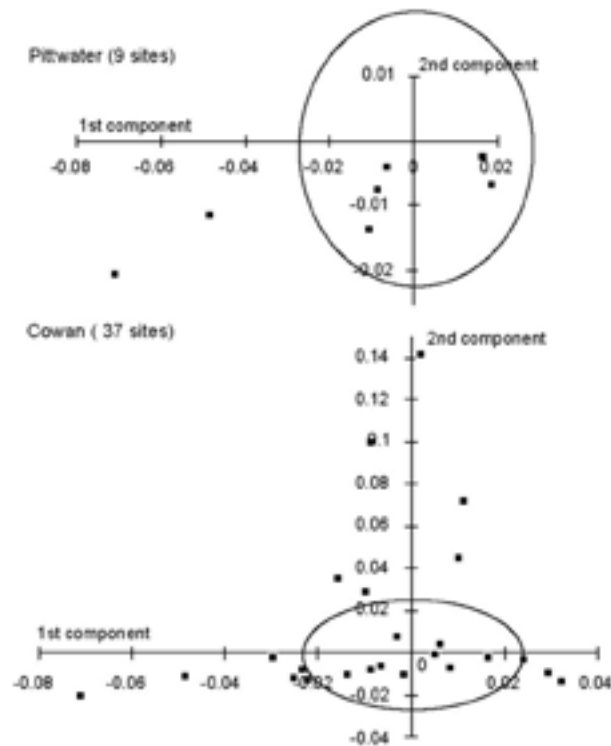


Figure 12.49: Cattai and Berowra drainage basins: technique. Bivariate plot of CA scores.

Darug Berowra

Core: 67%	Outliers	
	14%	0%
	0%	86%

This group of 21 sites are on the left bank of Berowra Creek. These sites are also very homogenous although less than the Cattai sites. The main outlier focus is in quadrant C (i.e. black pigment). The single outlier site in quadrant A has an engraved motif.



**Figure 12.50: Pittwater and Cowan Drainage basins: technique. Bivariate plot of CA scores.**

**Guringai Berowra**

Core: 60%	Outliers	
	50%	0%
	16.7%	33.3%

This group of 15 sites is slightly less homogeneous than those on the western side of this drainage basin but the technical emphasis of its outlier sites is completely different. There are many more stencils here and a number of sites with engraved motifs (quadrant A).

**Cowan**

Core: 48.6%	Outliers	
	15.8%	21.1%
	52.6%	10.5%

This group is quite heterogeneous and is focussed in the D quadrant with a minor focus in the B quadrant. The technical emphasis here is on white and red stencils (quadrant D). A number of sites have engraved motifs (quadrant A).

### **Pittwater**

Core: 55.6%	Outliers	
	0%	0%
	100%	0%

This group is relatively homogenous although the small sample size here (n=9) is noted. The technical emphasis in this group is on red and white stencils. There are no sites with engraved motifs.

### *3) Tharawal and Darug language areas (Basins 18 - 21)*

This group of 152 sites south of the Georges River span the designated boundary between the *Tharawal* and *Darug* language groups.

### ***Tharawal***

Core: 61.4%	Outliers	
	0%	2.9%
	9.8%	88.2%

This group of sites is technically homogenous with a focus on black drawings. A few outlier sites have red and white stencils. There are no engraved motifs in this area.

### ***Darug***

Core: 64.1%	Outliers	
	0%	0%
	9.7%	91.3%

This group of sites is fairly homogenous with a technical emphasis on black drawings. A few outlier sites have stencils (and red and white pigment). There are no engraved motifs. The technical emphases and core homogeneity in these two areas are very similar (Figure 12.51). A language boundary between these groups is not supported.

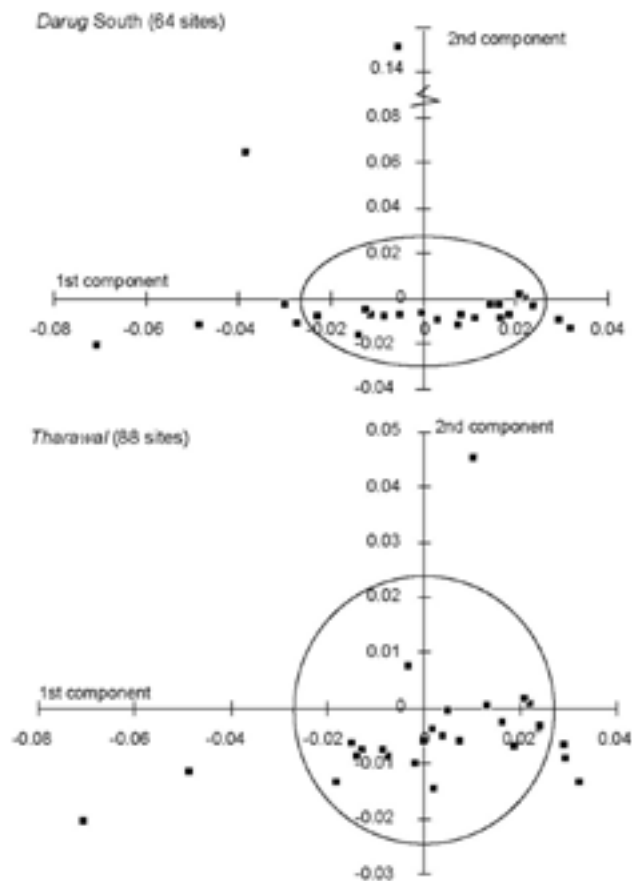


Figure 12.51: *Darug* and *Tharawal* Language Areas: technique. CA scores.

***Darug* Georges River**

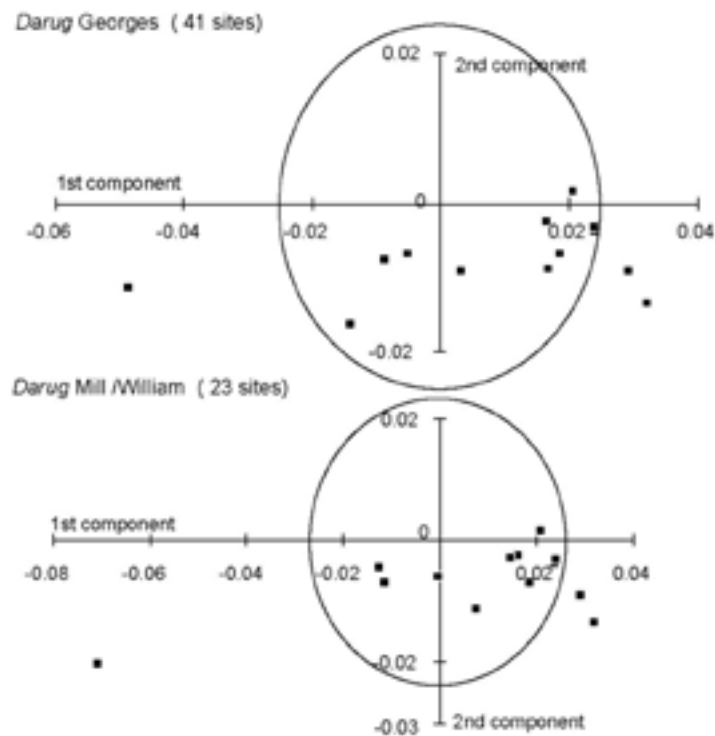
Core: 63.4%	Outliers	
	0%	10%
	7%	<b>93%</b>

The technical variables here are relatively homogenous with a definite outlier focus on black drawings.

***Darug* Mill and Williams**

Core: 65%	Outliers	
	0%	0%
	13%	<b>88%</b>

These sites are relatively homogeneous and like the other southern *Darug* group has an outlier focus on black drawings. One outlier site has numerous red and white stencils.



**Figure 12.52:** *Darug Georges and Mill/Williams drainage basins. Bivariate plot of CA scores.*

**Tharawal George, Mill and Williams**

Core: 57%	Outliers	
	0%	0%
	0%	<b>100%</b>

This small sample of sites here are less homogeneous but the outlier emphasis is still on black drawings.

**Woronora**

Core: 63%	Outliers	
	0%	4%
	4%	<b>92%</b>

This group is also quite homogeneous but again there is a strong focus on black drawings. A few sites have stencils only (including yellow ones: quadrant D) and several have engravings.



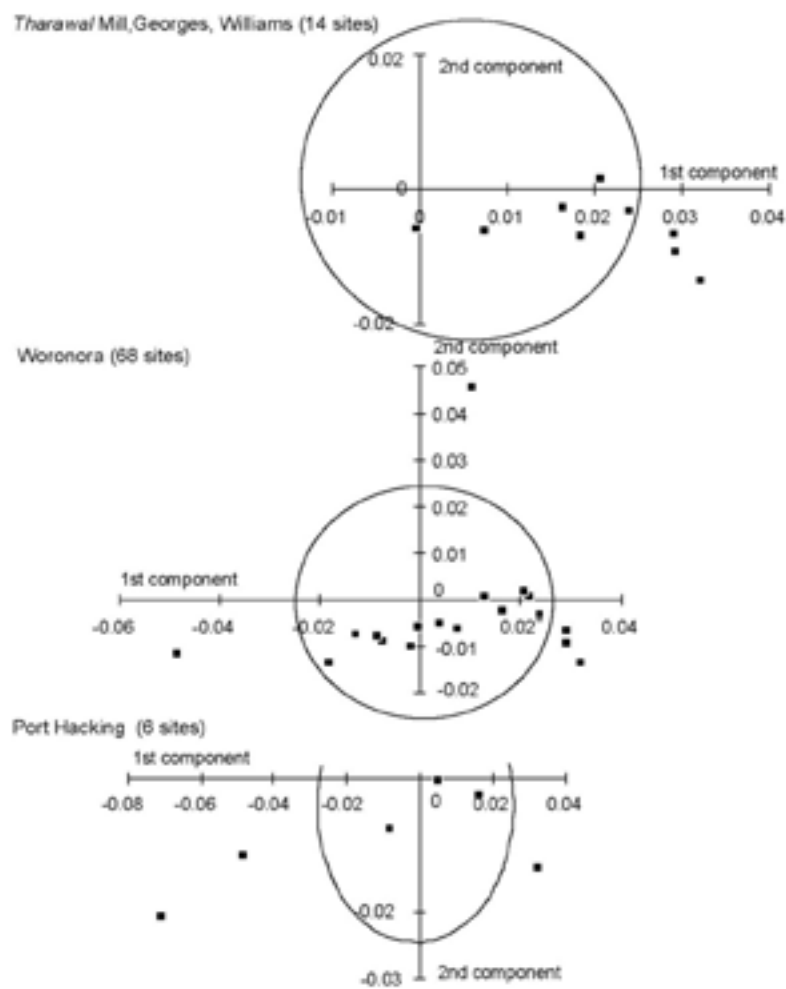


Figure 12.53: *Tharawal* drainage basins: technique. Bivariate plot of CA scores.

Port Hacking

	Outliers	
Core: 50%	0%	0%
	67%	33%

This group is less homogeneous than the other *Tharawal* sites, but the small sample size makes conclusions difficult. This group has a different outlier focus to other *Tharawal* groups. The two outlier sites in quadrant D contain stencils in red and white pigment.

Summary

The shelter sites demonstrate more homogeneity on the basis of technique variables than was found with motif preference. The *Darkingung* and northern *Darug* sites are the most homogeneous. The southern *Darug* and *Tharawal* sites demonstrate relatively high and similar levels of technical variability. The *Tharawal* and southern *Darug* sites show consistent levels of homogeneity. The *Guringai* sites are the most heterogeneous.

A general trend, from north to south, is demonstrated in the use of white pigment and charcoal. In all but *Darkingung* and *Guringai* areas the emphasis is on black drawings. In the *Guringai* area the use of red pigment influence the technical diversity. In the *Darkingung* area, engraved motifs play a part in the local diversity.

Internal variability was demonstrated across the different drainage basins. This was marked in the *Darkingung* sample, with the Upper Macdonald sites being the most heterogeneous in the region but the Central Macdonald group being one of the most homogeneous. This disparity in technique is marked, particularly in light of the highly consistent motif homogeneity and outlier foci in these two locations.

There is less disparity displayed by sites on either side of Berowra Creek using technique variables, although the outlier focus on either side of the creek is markedly different. Again, the *Darug* Berowra sites are similar to the Mangrove creek sites in levels of overall homogeneity - although more engraved motifs are found in the latter.

### Rare Motifs

Rare and unique motifs were analysed to establish their geographic distributions in the hope that this would elucidate localised stylistic traits. Analysis concentrated on non-economic motifs in an effort to reduce environmental influences.

The number of times that any individual motif occurred at any shelter site in the region demonstrated some interesting results (Table 12.6; Figure 12.54).

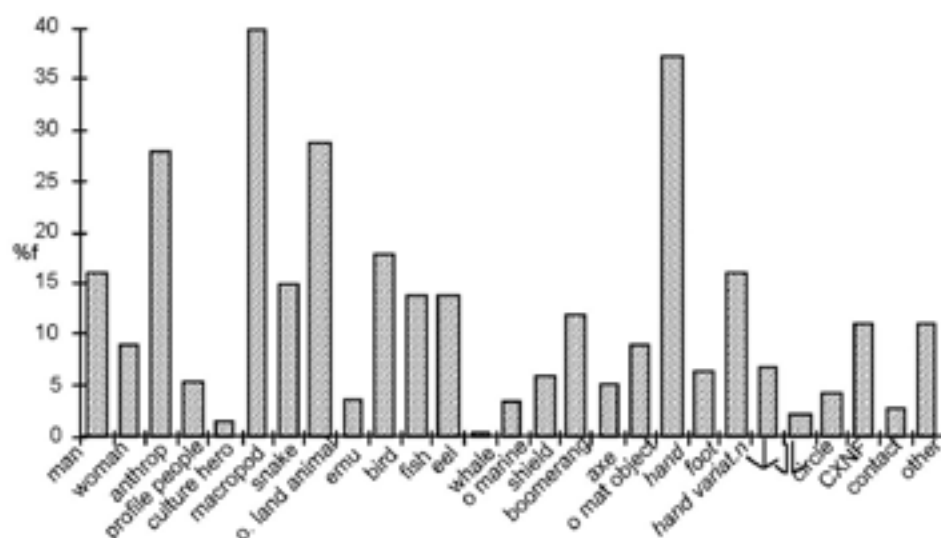
**Table 12.6: Shelter Art Motif totals. Maximum motif incidence, number of sites in the region with motif present, and % of sites with motif.**

Motif	Total	Max incidence	Sites with Motif present	% of Sites with Motif
Man	244	34	86	16.0
Woman	104	7	50	9.1
Anthropomorph	552	26	154	29.0
Profile Person	81	9	31	5.6
Culture Hero	18	6	9	1.6
Macropod	803	45	219	40.0
Snake	176	22	84	15.0
Other Land Animal	473	17	161	29.0
Emu	36	6	21	3.8
Other Bird	320	38	98	19.0
Fish	206	21	77	14.0
Eel	155	16	75	14.0
Whale	3	1	3	0.5
Other Marine	34	5	20	3.6
Shield	54	7	34	6.2
Boomerang	183	33	67	12.0
Axe	82	14	29	5.3
Other material object	117	12	50	9.1
Hand	3,588	417	206	37.4
Foot	69	9	36	6.5
Hand variation	609	79	86	16.0
Bird track	89	13	39	7.1
Roo track	24	5	12	2.18
Circle	81	30	24	4.4
CXNF	126	12	59	11.0
contact	45	22	16	2.9
other	266	43	63	11.0

The most frequently depicted motifs did not always occur at the most site locations. Macropod (40%) are found at most sites in the region followed by hands (37.4%), other land animals and

anthropomorphs (c.29%). Unlike the engraved *mundoes* which are a common motif but found at relatively few sites, hand stencils are ubiquitous. While not having the same prevalence as hand stencils, macropods occur widely in pigment sites given their overall numerical contribution (9.4% of the identifiable motifs).

The analysis of the maximum number of times that a particular motif occurs in a site shows that there are some shelter sites in the region with large numbers of certain motifs (i.e. 417 hands at Yengo 1; 45 macropods at #45-3-917, etc.: see Table 12.6). The geographic distribution of sites with some of the rarer motifs was plotted, as were the language groups into which these fall (Table 12.7).



**Figure 12.54: Occurrences (%f) of sites with particular motifs.**

The distribution of the rare motifs were also plotted (Figure 12.55 to Figure 12.58). These illustrate the focus for particular motifs in some areas and the relative absence of these same motifs from other areas. Women and snake motifs represent a proportionally higher contribution to the *Darkingung* sites, while profile people occur much more commonly than elsewhere in the *Tharawal* sites. Similarly, feet and contact motifs occur much more frequently in the *Guringai* sample than elsewhere, as do kangaroo tracks in the *Darug* assemblage and other marine animals in the Sydney assemblage.

'Other marine' themes occur relatively infrequently in the *Darkingung* and *Darug* sites. All anthropomorphic depictions are either rare or completely absent from the *Guringai* sample. Culture heroes and snakes are absent or extremely rare in the *Tharawal* sites.

An approximate randomization method (Noreen 1989, Wright 1992) was used on the Table 12.7 to test the statistical significance of these differences. Taking a probability level of 0.05 as statistically significant, the following significant differences are identified between language areas (Table 12.7).

There are statistically significant differences between the *Darkingung* language area and all other language areas. This is least strongly demonstrated between the *Darkingung* and *Guringai* groups (Table 12.8).

There are also statistically significant differences between the *Guringai* sites and those from the *Darug* and *Tharawal* areas. The most significant of these is between the *Guringai* and *Tharawal* groups. Interestingly the only significant difference recorded for the *Eora* sites is with the *Darkingung* sites (sampling is likely to be implicated in this result). There is **not** a significant difference between the *Darug* and *Tharawal* assemblages.

**Table 12.7: Rare Shelter Art Motifs: Distribution per Language Area. Statistically significant results in red/bold.**

Motif	Number (and %) of Sites with motif in each Language Area									
	<i>Darkingung</i>		<i>Guringai</i>		<i>Eora</i>		<i>Darug</i>		<i>Tharawal</i>	
Woman	<b>34</b>	<b>68</b>	<b>4</b>	<b>8</b>	0	0	6	12	6	12
Profile person	14	45	0	0	0	0	6	19	<b>11</b>	<b>35</b>
Culture hero	6	67	0	0	0	0	3	33	0	0
Snake	<b>15</b>	<b>71</b>	<b>2</b>	<b>0</b>	0	0	3	14	<b>1</b>	<b>4.8</b>
Other marine	<b>2</b>	<b>10</b>	3	15	<b>3</b>	<b>15</b>	<b>1</b>	<b>5</b>	<b>11</b>	<b>55</b>
Shield	18	53	6	18	1	2.9	7	21	<b>2</b>	<b>5.9</b>
Axe	19	66	3	10	0	0	5	17	2	6.9
Roo tracks	<b>3</b>	<b>25</b>	0	0	0	0	<b>5</b>	<b>42</b>	<b>4</b>	<b>33</b>
Bird tracks	16	41	5	13	0	0	12	31	6	15
foot	12	33	<b>10</b>	<b>28</b>	1	2.8	9	25	4	11
CXNF	37	63	3	5.0	0	0	10	17	9	15
contact	7	44	<b>4</b>	<b>25</b>	0	0	3	19	2	13
Total motif sample	7725	52.9	1504	10.3	65	0.4	2910	20.0	2387	16.4

**Table 12.8: Shelter art motifs. Significant values achieved for rare motifs in the five language areas.**

Language Areas compared		Significance value
<i>Darkingung</i>	<i>Guringai</i>	.004
<i>Darkingung</i>	<i>Eora</i>	<.001
<i>Darkingung</i>	<i>Darug</i>	<.001
<i>Darkingung</i>	<i>Tharawal</i>	<.001
<i>Guringai</i>	<i>Darug</i>	.030
<i>Guringai</i>	<i>Tharawal</i>	<.001

These analyses confirm general stylistic clines across the region as well as significant localised differences in the use of rare motifs. A comparison of these differences with those found in the engraved motif assemblage will contribute to the understanding of stylistic patterning in the region (chapter 3).

### Composition

Here the compositional details of two rare motif categories (shields and culture heroes) are analysed. These same two motifs were analysed in the engraved assemblage. The

pigment motifs demonstrate less compositional ‘rigour’ than the engraved component. Officer (1984) argued that this was due to pigment art being ‘less culturally fettered’. The fact that the techniques used are usually freehand drawing no doubt also contributes to a greater flexibility in the graphic vocabulary used in this art form.

### Shields

The 34 sites with 54 painted, drawn or stencilled shields were analysed (Figure 12.56). It was hoped that this analysis of pigment shield designs may contribute further to determining the interrelatedness of contacts around the region - as shown by engraved shields (see chapter 11).

Much less design structure was identified with the pigment shield motifs. The vast majority (83%) consist of either a simple outline or solid internal infill. In one site (Figure 5.21) there is a stencilled parrying shield (with no decorative infill).

In the Warre Warren area there are several examples with internal designs that correspond to the classification developed for the engraved shields (e.g. Figure 5.18). In all, a total of ten shields, from seven sites, can be classified using the design categories defined. Only three identified forms occur: types 2B, 2C and 2E (Figure 11.30). All three of these were recorded in one site in the Warre Warren area (#45-3-970), while three other examples of type 2C were recorded at another Warre Warren site (#45-3-1602), on the Colo River (#45-2-292) and at Manly (#45-6-1262).

Two forms unidentified in the engraving assemblage were recorded at two sites in Middle Harbour and Lane Cove, these being a double longitudinal line (2E) and a single chevron design, from site #52-2-453 in the *Tharawal* Avon/Cordeaux drainage basin.

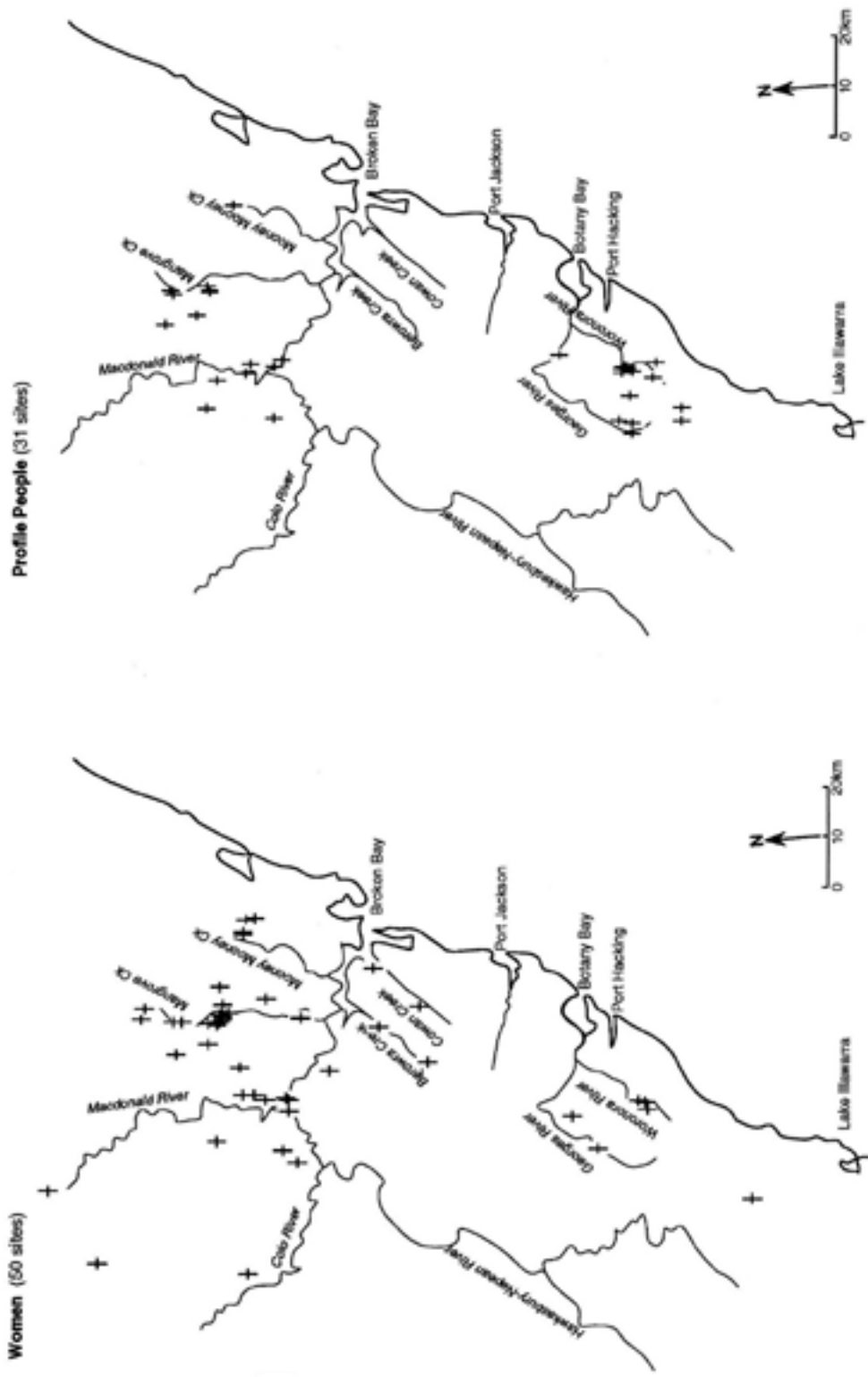
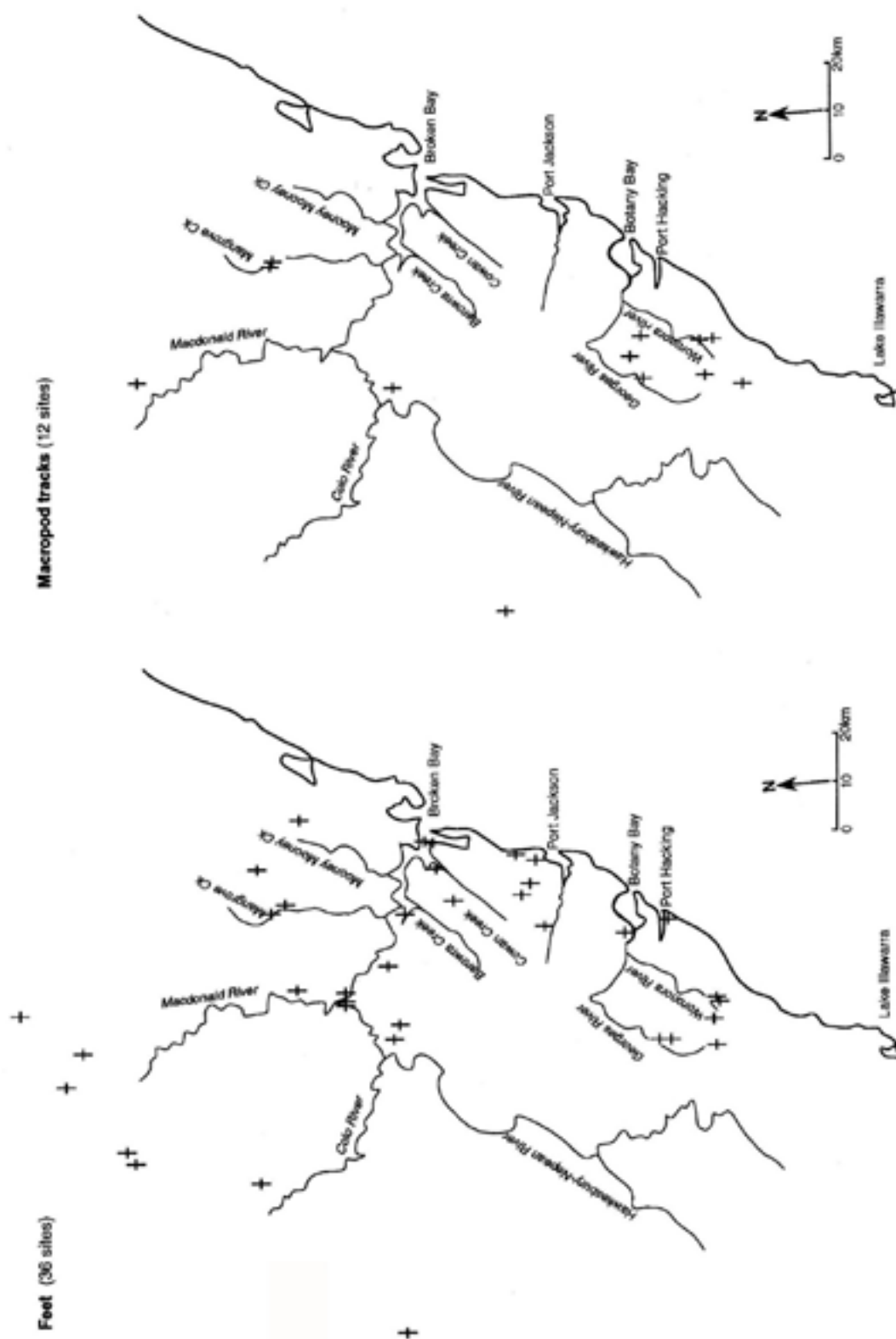


Figure 12.55: Pigment art sites. Distribution of shelters with women and profile people motifs.





**Figure 12.57: Pigment art sites. Distribution of shelters with human feet and macropod track motifs.**

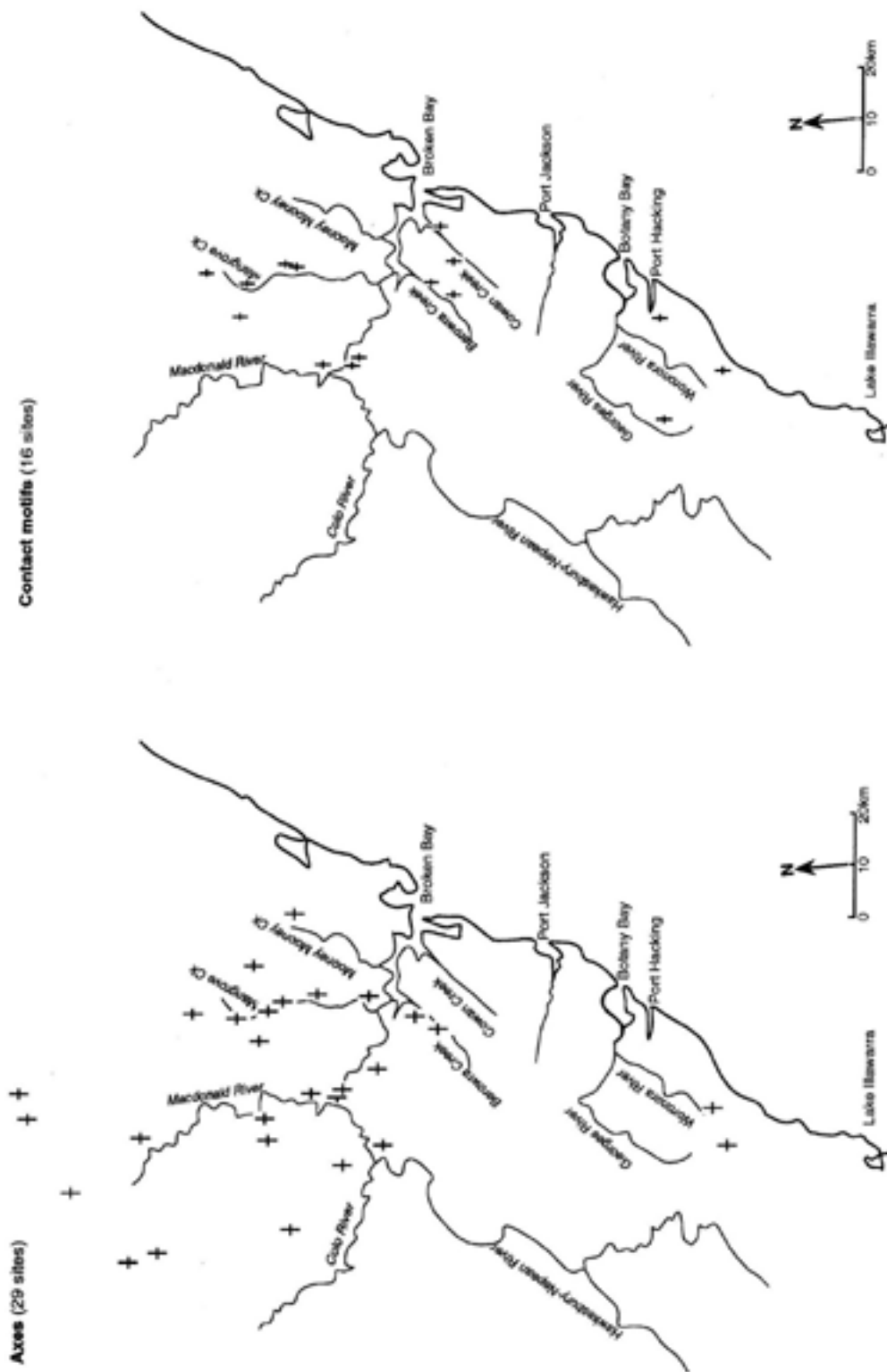


Figure 12.58: Pigment art sites. Distribution of shelters with axes and contact motifs.



The small sample of shields with internal designs makes a detailed distribution analysis redundant. The relative absence of shield designs, in comparison with the engraved component, is interesting in itself. It reinforces the general contention that this is a less stylistically constrained medium. While the sample size of pigment shield designs is very small, certain similarities and differences with the engraved assemblage's results can be made.

- The double (horizontal) cross design (2C) was the most common engraved variety, and 40% of the pigmented shields with designs were also of this type;
- The pigment shields with designs were located mainly in the *Darkingung* area with one only in the *Guringai* area. This is in stark contrast to the definite engraved shield design focus in the *Guringai* area;
- The only pigment shield with a St George cross (Type 2B) design was located in the *Darkingung* language area, Mangrove Creek catchment. In this same site two other design forms (2C and 2E) were also found. Type 2B was concentrated in the *Guringai* and *Darug* language areas with the engraved shields;
- The one engraved shield in *Tharawal* language area had no internal design; the drawn version has a quite distinctive chevron design, not recorded elsewhere in the pigment assemblage and not in the engraved assemblage (however, see Collins 1798[1975]: Appendix VI; Plates 5 and 6);
- No pigment shields had the diamonds design element at either end of the shield. This engraved design element was concentrated in the Cowan and Middle Harbour catchments. The pigment shield assemblage (in Middle Harbour and Lane Cove catchments) included a design which did not occur in the engraved component - a double longitudinal line design.

### *Culture Heroes*

Only 18 pigment culture heroes occur in nine sites across the region (Figure 12.56). The discussion here is restricted to those 17 motifs from eight sites from the north of the region<sup>39</sup> (Table 12.9). In the shelter art component, this motif's form and distribution is significantly more restricted than is found in the engraved component. All of the pigment culture heroes are of the *Biaime* type. The analysis of this rare motif's distribution indicates that it occurs only in *Darkingung* and *Darug* language areas. The engraved culture hero focus is in the *Guringai* language area. No pigment culture heroes were recorded in the *Guringai* area.

This motif is found amongst a range of assemblage sizes, including in the largest recorded in the region (Swinton's). At four sites, these motifs occur in isolation. In two sites they are paired male and female. In one site (45-2-189: Sim 1969) there are six pigment culture heroes.

The two engraved forms of culture hero are the *Daramulan* and the *Biaime* types. In the engraved component, excessive size was a significant aspect of the classification. Decorative infill and/or the presence of therianthropic characteristics were also considered important. Larger size is a consistent criterion in this medium also, although the pigment forms are generally smaller than their engraved counterparts. The mean size of the pigment culture heroes is 1.25m (standard dev. 0.6) and the largest of these motifs is c.3.0m long (at Canoelands: Clegg 1977, McCarthy 1961).

<sup>39</sup>One culture hero was recorded by the Sydney Prehistory Group (1983) south of the Georges River. This was counted during the Rock Art Project (McDonald 1985a). This reanalysis of motifs necessitated further inspection of the original scale recordings, held by NPWS (in the AHIMS Sites Register). The original SPG drawings went missing from the Sites Register during the move from the city to Hurstville (Ian Johnson, then NPWS Sites Registrar, pers. comm.). The motif from site #52-2-23 could not be reanalysed for this analysis.

Size appears to be due in part to the smaller ‘canvas’ size available in shelter sites. The consistent size range demonstrated by these motifs and the fact that these are indeed larger than the majority of anthropomorphic figures depicted in shelter art sites<sup>40</sup> suggests that relative scale is still a consideration in this motif’s graphic ‘vocabulary’ or schemata. This motif is also differentiated from plain anthropomorphs on the basis of infilled decoration and attachments (e.g. the double and single horned anthropomorphs in the Mangrove and Mogo Creek catchments).

**Table 12.9: Shelter Art sites. Culture heroes: compositional details.**

Site	Max length (m)	Animal features	Headdress	Horns	Other features	Colour	Technique
45-2-189	1.25	-	√	-	redrawn	Black, white + red	Drawn outline/ infill
	1.15	-	√	-	redrawn, 3 white eyes	Black, white + red	Drawn outline/ infill
	1.0	-	√	-	redrawn, white eyes	Black, white + red	Drawn outline/ infill
	2.1	-	√	-	head and arms only, white eyes	White + red	Drawn outline/ infill
	0.9	-	-	-	4 white eyes holding spear + bag	Black, white + red	Drawn outline/ infill
	1.8	-	√	-	6 white eyes	Black, white + red	Drawn outline/ infill
45-3-252	1.1	-	-	√	late in sequence	Red	Drawn outline/ infill
45-3-317	1.4	-	-	√	female white eyes	Red + White	Drawn + painted outline/infill
	1.5	-	-	√	male white eyes	Red + White	Drawn + painted outline/infill
	0.95	-	-	√	female white eyes	Red + White	Drawn + painted outline/infill
45-3-568	3.0	√	-	-	several production episodes ?	Red, yellow, black + white	Drawn outline/ infill
45-3-794	0.7	-	-	-	male	Black	Drawn outline/ infill
	0.75	-	-	-	female	Black + engraved	Drawn outline/ infill
45-3-814	1.7	-	-	√		Red	Drawn outline/ infill
45-3-1136	1.2	-	-	-		Red	Drawn outline/ infill
45-3-1602	c. 1.0	-	-	√	lower half weathered	White	Painted outline
	1.15	-	√	-		Red + White	Drawn outline/ infill

The distribution of the horned anthropomorph culture hero form is extremely localised. Eight of the culture heroes (47%) are in the Mangrove Creek catchment and five of these are the red horned anthropomorph form (Figure 5.14)<sup>41</sup>. A sixth red horned anthropomorph is located near Mogo Creek less than 10km west of Mangrove Creek. A pair of black culture heroes in the Mangrove Creek catchment (at #45-3-794) has a very similar morphology (minus the horns).

<sup>40</sup>This has not been quantified on a large scale. A limited analysis of the 33 anthropomorphic figures (men, women, profile people and anthropomorphs) at the Swinton’s site indicated that the mean size for these was 0.46m (st dev. 0.2). The culture hero at this site was 1.1m long.

<sup>41</sup>The distribution of this motif is highly suggestive of the *Darkingung* mythical creature called *Ghindaring*. This malevolent creature was said to inhabit the rocky places on sides of mountains and have a body ‘with a red glow like burning coals’ (Mathews 1904: 345).

Only one of the pigment culture heroes is therianthrope. The Canoelands culture hero has a macropod-like head (i.e. in profile) with otherwise anthropomorphic characteristics (albeit seven fingers on one hand).

These motifs have been produced in range of colours, although red is the most common. Most of these motifs are drawn, but several also have painted elements. Monochrome is less common than bichrome and there is the one polychrome example (at Canoelands: Table 12.9). One black example also includes some abraded lines.

This analysis provides contradictory evidence to the engraved component. The most obvious difference in these results is in the more restricted geographic distribution of the pigment form motif. There is almost no overlap in the distribution of this motif in the two different art components (cf. Figure 11.26 and Figure 12.56).

The absence of pigment *Daramulan*-type culture heroes is very interesting. This however does correlate with the distribution of this form generally: with the exception of one *Daramulan* found at Maroota, all of the *Daramulan*-type engraved culture heroes are in *Guringai* territory.

### Shelter art sites: conclusions

The analysis of this art component included a general investigation of regional characteristics including technical options and motif focus.

Colour usage across the region reveals definite stylistic preferences which are not related to pigment availability. In the south of the region there is a definite preference for black pigment. In the north of the region there is a definite preference for white pigment. While this reflects the prevalence of stencilling as a technique - white drawings and paintings are also common. The dominance of white colour use in the north supports a model of contact between this part of the Sydney region and the Hunter Valley.

The CA of motif and technique indicates that there is a core of greater stylistic homogeneity in the centre-west of the Sydney Basin. From this core central area the surrounding art demonstrates increasing stylistic variability. This core style area is not the same as that identified for the engraved assemblage. And technique variables reveal a slightly different core focus pigment motifs. The techniques used in pigment art across the region are relatively homogenous.

While these analyses have demonstrated localised stylistic variability across the Sydney region, only in one area is this variability distinctive enough to identify a style boundary.

Stylistic variation can be explained in terms of the defined language areas. The core of stylistically homogeneous shelter art sites occurs in the *Darkingung* and northern *Darug* language areas. The *Guringai* and southern *Darug* sites are the least homogenous, while the *Tharawal* sites are also relatively heterogeneous.

The proposed location of the *Darug/Guringai* language boundary is supported by shelter motifs, with a strong separation between sites on either side of Berowra Creek. There is less disparity shown when technique variables are considered, although the technical choices demonstrated (i.e. outlier foci) on either side of the creek are markedly different.

The investigation of *Darug* sites north and south of the Cumberland Plain revealed that some 'bedrock design notions' (Sackett 1990) transcend the distance between these two assemblages. Both sets of *Darug* sites have a predominance of hand stencils with macropods, other land animals and anthropomorphs dominating. Distance, however, has created some fundamental differences between the *Darug* sites on either side of the Cumberland Plain. These are most obvious in terms of schema. The southern sites have a schematic preference for the use of four legs on terrestrial animals and two legs on birds (compared with two and one, respectively, in the north). This schematic vocabulary is present in the southern *Darug* and *Tharawal* sites, but not the northern *Darug* sites. This stylistic convention does not support the proposed boundary between the *Darug* and *Tharawal* language groups. The pigment art suggests that there was more social interaction between the southern *Darug* group and *Tharawal* speakers than there was between southern and northern *Darug* members.

The analysis of rare motifs demonstrated significant differences between the two art components. The amount of information-laden detail in the *engraved* shields, and the distribution of engraved shield designs were not mirrored by similar design detail or distribution patterns in the pigment shields. Culture heroes also showed different distribution patterns and a much more restricted design vocabulary.

These results support a model for the expression of very different social behaviours in the two art contexts.