CHAPTER 1 INTRODUCTION

1.1 Introduction

This work is a study of spatial variation of Australian Aboriginal personal ornaments. The geographic patterning of personal ornaments held in Australian Museums will be examined, using ethnohistoric literature and archaeological evidence to investigate the distribution of a group of ornaments. Environmental and behavioural factors will be considered as explanations for the distribution.

The project evolved from the material culture study and patterns of variation that emerged in my Honours' thesis on boomerangs (McAdam 2001). It is related to another study undertaken by a fellow student from the University of New England on body scarring (Brady 2005). In my study on boomerangs, I established that there was patterning geographically, and some of that patterning was related to drainage basins as I will discuss in Chapter 2. This led to the question of whether a similar patterning existed for other categories of Australian Aboriginal material culture and what implications there might be for the study of stylistic patterning in a global context. Can we take a category of ethnographic material relevant to a group of people and find patterning that was not revealed by previous studies such as different patterning for different classes?

1.2 Beads in archaeology

There has been a lot of debate about the emergence of modern human behaviour and the identification of that behaviour in the archaeological record, some of which touches on the early appearance of personal ornaments (Franklin and Habgood 2007; McBrearty and Brooks 2000; Noble and Davidson 1991). Symbolism is seen by many as a defining marker by which the start of modern human behaviour can be determined, and one of the elements of symbolic

behaviour is the wearing of personal ornaments such as beads (Balme and Morse 2006; Bednarik 1997; Bouzouggar et al. 2007; d'Errico et al. 2003; d'Errico et al. 2005; Davidson and Noble 1992; Henshilwood et al. 2004; Henshilwood and Marean 2003; Khun et al. 2001; Noble and Davidson 1996; Vanhaeren 2005; Vanhaeren et al. 2006; White 1989; 1993a; 1993b).

Several pivotal studies of personal ornaments and other objects of material culture have been undertaken outside Australia (Hodder 1982a; 1982b; 1982c; 1986; 1989; White 1989; 1993b; Wiessner 1982; 1983; 1984; 1985; 1989; 1990; Wobst 1977) but few exhaustive studies have been undertaken within Australia (Best 1999; Dickens 1996; McCarthy 1935; 1940; 1965a; 1967). Researchers have looked at spatial patterning of material culture to investigate stylistic variation as an expression of identity and to argue that objects of personal ornamentation may contain information about individual relationships within a group, and between members of one group with members of another group. For example, Polly Wiessner (1989: 56) proposed that 'social identification via comparison…constitutes the underlying basis for style in material culture'. If this is so, the variation found in early bead forms could indicate that hominins were using ornaments to convey social, individual and/or territorial information as early as 75,000 to 80,000 years BP and possibly earlier (Bouzouggar et al. 2007; Henshilwood et al. 2004).

In 2005, Marian Vanhaeren produced the first in-depth synthesis of data on early personal ornaments, backed by a survey of the ethnography of the function of beads in hunter-gatherer societies. Vanhaeren (2005) offered a range of functions for bead production, using examples from different countries to demonstrate her points. She referred to the Australian evidence - but only briefly. In this study, I have explored variation in beaded ornaments in relation to several other spatially restricted aspects of Australian variation. While function cannot be addressed directly, function may be inferred from a consideration of such patterns of variation. The advantage for an Australian study is that there is ethnographic and ethnohistoric material available that explains the lifestyle of hunter-gatherers at first European contact and may be useful for explaining the archaeological record. It is not my intention to place the focus of this work on the argument about symbolism and the Palaeolithic, but there are implications of the study for the use of personal ornaments across continents.

Vanhaeren and d'Errico investigated the patterning of beads for determining ethno-linguistic geography of Aurignacian sites across Europe. Based on ethnographic studies by previous researchers including Polly Wiessner (1982; 1984), they argued:

> Since the other functions for personal ornaments – i.e. markers if gender, age, class, wealth, social status, and use as exchange media, etc…- are governed by rules shared by the members of a community, beadwork used in these ways also contributes, even if unintentionally, to differentiate a society from a neighbouring one. As a consequence, we expect that ethno-linguistic entities will be identified archaeologically by geographically coherent clusters of sites yielding particular ornament types as well as by characteristic proportions and associations of types found over larger areas. (Vanhaeren and d'Errico 2006: 1107)

Vanhaeren and d'Errico have undertaken the most explicit and thorough study of variation in beaded objects on a continental scale. My study will investigate beaded objects across the Australian continent and near shore islands, and relate to Vanhaeren and d'Errico's study at that scale.

Central to my study is Wiessner's argument:

> …if style is a means by which persons negotiate and communicate personal and social identity *vis-à-vis* others, then this points to a new potential use of style in archaeology – as an indicator of the balance between the interests of the individual and society…personal and social expression being measured by heterogeneity or homogeneity, respectively, in artefacts. (Wiessner 1989: 59)

Wiessner (1989: 61) added that 'patterns of variation can potentially stem from several sources'. Sources include varying social conditions, exchange and the symbolic role of the object. At the time of European contact, personal ornaments were important to Aboriginal people and many were exchanged over the extensive networks that crossed Australia. Some of those ornaments would have been more valuable as exchange items than others and travelled greater distances. The style of objects for particular functions should depend on the scale of information that is encoded in it.

This work will investigate whether variation appears at different scales in different categories of artefacts, reflecting their importance as trade/exchange items or for local use. For example, was there more added value (e.g. engravings) displayed on ornaments traded over long distance than for those made for local use? The ornaments should have three levels of

meaning. First level should be the making of the objects (e.g. the maker may not be aware of what they are imposing on the form but someone else may see it as so). Second level would be the ornament itself and the third may be the added value (e.g. decoration).

1.3 Aims and rationale

The aim of this work is to:

- assess the significance for theories of stylistic variation of spatial patterning using beaded ornaments across Australia.

In particular, I will investigate Australian Aboriginal bead distribution in relation to ethnolinguistic factors, function and as markers of identity (Vanhaeren 2005; Vanhaeren and d'Errico 2006; Wiessner 1982). To do this, I propose to undertake a synthesis of Aboriginal beaded objects held in the major ethnographic collections in Australia and place them in an archaeological context. In the process I will:

1. set up a classification system for Australian Aboriginal beaded ornaments held in ethnographic collections;
2. map the distribution of Aboriginal beaded ornaments across Australia using drainage divisions, Horton's (1994, 1996) language divisions and localised areas as spatial units; and
3. investigate the spatial relationship of discrete classes of beaded ornaments from archaeological and ethnographic material.

The classification I have defined is intuitive and obvious and is spatially distinctive based on raw material and form of objects. This process will enable me to address the following questions.

1.4 Research questions

The principal research questions addressed in this study are:

- What is the spatial patterning of stylistic variation of Australian Aboriginal beads?
    - Is the spatial patterning the same for different classes of beads?
- What behavioural variation is associated with the patterning?

- To what extent can our knowledge of ethnographic beads in Australia allow inferences or hypotheses about beads in early prehistory?

These questions arose from among questions proposed by Wiessner (1983: 253):

- 'which items and which variables on these items carry social information?'
- 'how do different patterns of stylistic variation over space correspond to intergroup and intragroup relations?'

Fundamental lines of enquiry for addressing the principal research questions are:

- Using Aboriginal beaded ornaments held in Australian Museum collections:
    - what degree of variation in raw materials occurs?
    - what degree of variation in morphology occurs?
    - what degree of variation in decoration occurs?
    - what is the function of discrete categories of beads?
    - can distributional boundaries be identified within the variation of discrete categories?
    - will exchange be an important factor in determining the production of categories?
    - is patterning different for different categories of ornaments?

To address these issues, I will compare the details of available ethnographic objects and literature in context with the archaeological record for beads and pendants in Australia.

1.5 Hypothesis

My argument is:

- Spatial patterning of Australian Aboriginal beads will differ between different classes of beads and much of that patterning will be affected by behavioural variation.

The classes I refer to here are those I have nominated in Chapter 8, with major classes of series and pendants, which are then divided into forms and sub-forms dependent on raw material. Following on from that argument is:

- Inferences may be made about beads in early prehistory from a study of ethnographic beads in Australia.

The outcome of this study may have implications for archaeological data that have no ethnographic or ethnohistoric information. This study will be useful as an example of ordering material as a way of interpreting hunter-gatherer use of the landscape.

1.6 Limitations of the study

One of the problems is in defining beads. Do the segments have to be pierced? For example, can grass bugles be defined as beads? I would say they are in the same way vertebrae are natural beads. Can a series of teeth attached to a string with methods other than threading through a hole be called beads? While I am aware there is an issue about the making and recognition of holes in ornaments, in a country like Australia – so rich in vegetable gums and beeswax (for manufacturing adhesive) - was there a need to spend valuable energy drilling or piercing teeth when the object could be suspended with adhesives available in the environment?

There are two separate issues here:

1. the manufacture of objects for display; and
2. the use of display.

I do understand that the actual manufacture has cultural influences. The act of piercing may, in fact, have been significant.

1.7 Definition of key terms

I am aware of the continued debate in archaeology and anthropology about the definition of terms such as 'culture', 'style' and 'material culture'. For this study, I have used generally accepted definitions for the terms. I have adopted definitions that I think are appropriate for the context of this study and mean no disrespect to those who might not approve of these terms.

Beads: for the purpose of this study, a bead is something that is external to the body and can be suspended from the body by means of something other than itself.

Pendant: an object that is suspended from the body with string (may be made of hair, vegetable fibre or other materials). The string will be attached to the object at one or two points. The object may include more than one segment, or a set of segments

cemented together as a solid object. From this point on, when writing in general about 'beads and pendants', I will use 'beads' to refer to both classes of objects.

Culture areas: this term has been discarded in more recent years. I use the term in this study as a way of referring to Peterson's (1976: 62) description of cultural divisions. I have chosen the following definition:

> …a geographic region in which inhabitants share sociocultural characteristics that distinguish them from inhabitants of adjacent regions. *(http://courses.washington.edu/anth/310/culture.htm)*

Drainage basin (catchment area): refers to the area that catches flow-off or run-off from the drainage divide to the stream. In the case of large drainage basins, this incorporates all the slopes, tributaries, major and minor streams and valleys that are between major drainage divides. For example, Lake Eyre is an enclosed drainage basin that incorporates major and minor streams as far east as the Great Dividing Range. For minor drainage basins, this includes areas of run-off between major streams. In this project, I will use the map provided by Geoscience Australia (*http://www.ga.gov.au*).

Drainage divide (watershed): a line along the crest that marks the boundary, between two or more catchment areas (drainage basins). The runoff is separated into different drainage basins.

Ethnography: 'Ethnography is a description of a group of people and their behaviour contemporary with the writer' (Davidson 1988: 19).

Style: 'style is a property of material culture (things made by people), which can be identified by an observer as an indexical sign of the repeated patterns of behaviour of the makers, or which can carry a symbolic meaning intended by the makers. In either case, the meaningfulness of the style derives from the repeated patterns which establish the conventions either of making the thing, or of making the meaning' (Davidson, I. 2008, pers. comm. 8 July).

Symbols: 'a symbol is a representative of another thing…(1) the thing stands for something other than itself; (2) that it does so by convention (Noble and Davidson 1996: 5).

1.8 Evidence for symbolic behaviour in Australia

Australia has widespread archaeological evidence for early symbolic behaviour with sites that date to the Pleistocene spread throughout the continent, near shore islands and Tasmania (Brumm and Moore 2005). Archaeological evidence includes: art and ground pigments; burials; lithic technology; bone implements; body modification; and the wearing of removable

personal ornaments – including beads. Figure 1.1 shows locations of archaeological evidence for Pleistocene occupation in Australia.

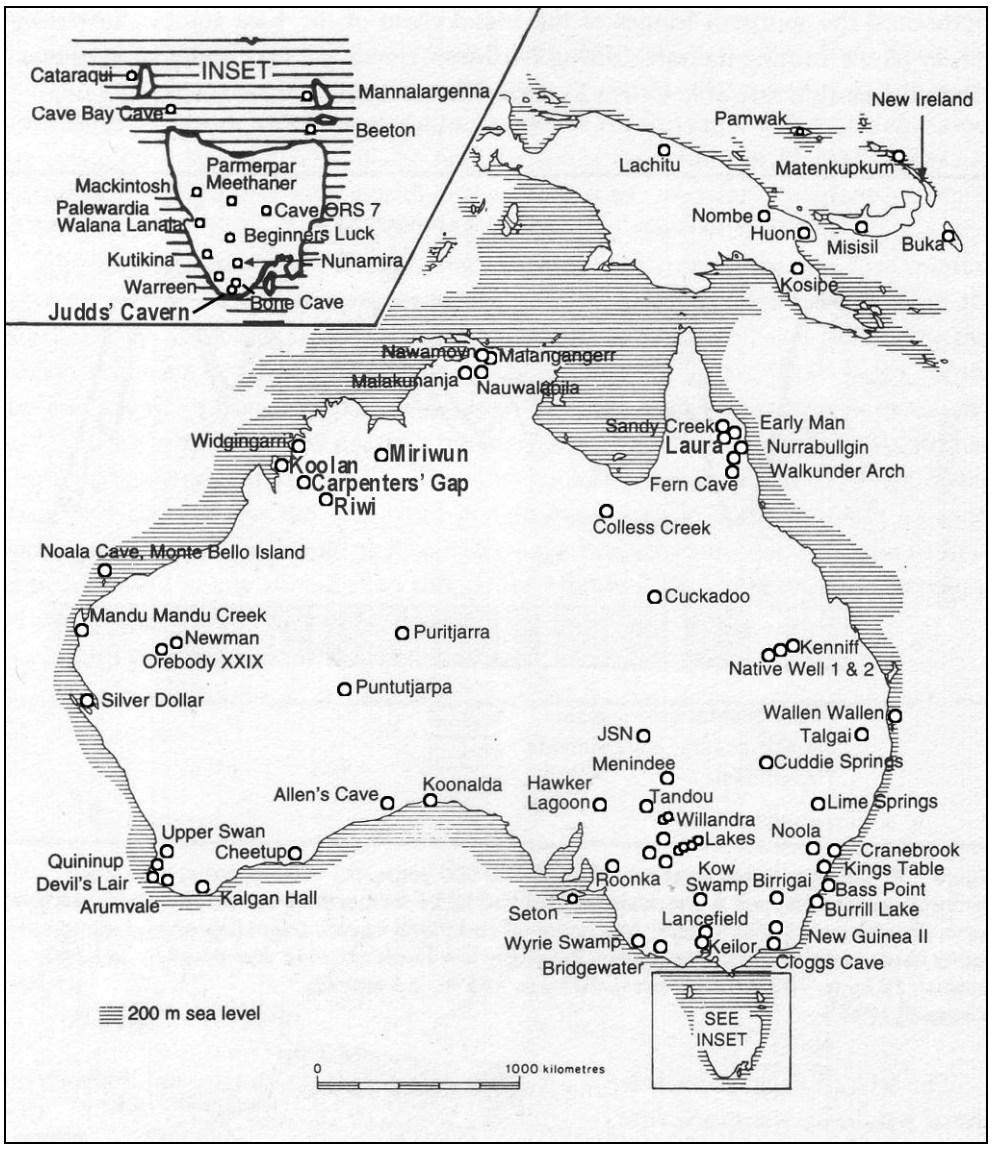

Figure 1.1 Pleistocene sites in Greater Australia, adapted from Flood (1995: 30)

There are claims for the colonisation of Australia as early as 60,000 years ago (Bowler et al. 2003; Roberts et al. 1990) but certainly by 45,000 there were people in Australia (Allen and O'Connell 2003). The first colonisers had to make at least two deep sea crossings to reach Flores (north-west of Australia) and more than six crossing to reach Australia (Birdsell 1977; Morwood et al. 1998; O'Sullivan et al. 2001). Davidson and Noble (1992; Noble and Davidson 1996) argued that this required planning and the building of a boat. People had to have the foresight to envisage a voyage and the capability of constructing a seaworthy craft and this would have required the symbolic representation enabled by language – a trait the authors associate with modern human behaviour. Australia has archaeological sites that

contain beads dated well into the Pleistocene (Balme 2000; Balme and Morse 2006; Morse 1993; 1996) and, unlike the European scene, there is a good deal of ethnographic material and contemporary European literature that relates to the function and use of ornaments.

1.9 Evidence for oldest beads

In this section, I will describe a review of the antiquity of beads and their widespread use. The antiquity of beads is important because personal ornaments are considered by many as evidence of symbolic behaviour and there is interest in establishing when that behaviour evolved. As summarised in the following pages, it appears that the oldest beads are from Africa, then the Near East, Europe and Australia. The archaeological evidence for beads in Australia will be presented in Chapter 4.

1.9.1 Oldest beads in Africa

In 2003, thirteen pierced *Nassarius gibbosulus* marine shells were recovered in a layer dated between 73,400 and 91,500 old at the Grotte des Pegeons, near the town of Taforalt in eastern Moroco, North Africa, (Bouzouggar et al. 2007). The shells were found *in situ* in hearth remains in association with other human activities such as stone tools and animal remains. The authors claim the layer is most likely around 82,000 years old. The shells had to be transported over 40 km to the site and some shells have evidence of possibly being strung. Ten shells exhibited red pigment (one of these was not perforated). The authors argue the perforations in the shell are deliberate or, less likely, shells selected because they had a large perforation that had occurred naturally and they were worn by stringing (Bouzouggar et al. 2007: 9968). The authors saw a similarity between the genus of the Taforalt shells and the ochred and perforated shells recovered from Blombos Cave in South Africa.

Early beads have been found in South Africa at Blombos Cave, Cape Province. Forty-one *Nassarius kraussianus* culturally perforated shell beads were recovered, dated to c. 75,000 BP (d'Errico et al. 2005; Henshilwood et al. 2002; Jacobs et al. 2006). The shells display a use-wear pattern consistent with friction from rubbing against string or other materials. Red ochre residues inside the shells suggest the shells were coloured or were in contact with ochre. If the shells were painted, this could indicate that value was being added to the beads for a purpose. Bouzouggar and others claim that beads from Blombos and Taforalt show there is a

standardisation in the species and form of shell beads soon after or before 75,000 years ago and that choice of species, colour and transport were part of a shared, non-utilitarian convention. The convention was passed from generation to generation, which implied that meaning was recorded within that convention (Bouzouggar et al. 2007: 9969). An interesting point here is that *Nassarius* sp. shell beads are thousands of kilometres apart in space from the North African beads yet there is not a great deal of difference in the time of their appearance. The evidence from Grotte des Pegeons and Blombos is compelling and gives depth to the antiquity for the use of beads.

Undisputed archaeological evidence for the manufacture of beads comes from Enkapune Ya Muto, Kenya, Africa, where worked ostrich shells have been discovered. Thirteen complete beads , twelve preforms and 593 bead fragments have been reliably dated to around 40,000 years BP (Ambrose 1998: 388). Ambrose points out that not only were beads used as ornaments by modern hunter gatherers in Africa, but the !Kung San commonly give beads as gifts in a formal systems with 'delayed reciprocity'. Ambrose (1998: 388-389) considers this has implication for the evolution of exchange systems and argues that beads travelled along exchange networks as part of the strategy to help survive risk in poor environments. These beads show a standardisation of production, a repeated patterning in the actual production and in the finished product. There is no dispute that these beads are cultural.

From around 40,000 years BP, beads turn up more regularly. Vanhaeren (2005: 539-540) lists sites with beads between 33-44,000 years BP in southern and eastern Africa (Beaumont et al. 1978; Cooke 1971; Deacon 1995; Grün and Beaumont 2001; Inskeep 1962; Mason 1962; Mehlman 1991; Plug 1982; Thompson et al. 2004) and several unverified claims for North Africa (Debénath 1994; Morel 1974; Tillet 1978). Most sites have insecure dating. Since then, Vanhaeren and others have rethought the authenticity of one of these sites, claiming a single perforated *Nassarius gibbosulus* shell from Oued Djebbana in Algeria could be 35-90,000 years old (Vanhaeren et al. 2006). The shell was located in a museum in Paris and there is uncertainty about the excavation techniques (place and stratigraphy) used in the 1940s when the shell was recovered.

1.9.2 Oldest beads in the Near East

Similar circumstances surround two perforated *Nassarius gibbosulus* shells found in the 1930s at a burial site at Es Skhul, Israel. The shells have been dated to 100,000-135,000 years BP (Vanhaeren et al. 2006). The authors have interpreted the finds at Es Skhul and Oued Djebbana as evidence for 'long-lasting' and 'widespread' bead-working that existed in the Levant and North Africa prior to the arrival of anatomically modern humans in Europe (Vanhaeren et al. 2006: 1788).

A date of 90,000-100,000 years has been claimed for four perforated *Glycymeris* sp. shells at Qafzeh Cave, Israel (Valladas et al. 1998). However, the perforations may have been through natural causes and some think the shells were not used as ornaments but more likely as ochre containers (Taborin 2003). Before the discovery at Blombos, it is hard to argue for the evolution of modern behaviour on these finds of a single or a few shells.

Perforated marine shells (predominantly *Nassarius* sp., *Glycymeris* sp. and *Columbella* sp.) have been recovered from Uçagızlı, South of Turkey, (dated c. 41,000 years BP) and Ksar'Akil in Lebanon (dated c. 43,000 years BP) (Kuhn et al. 2001: 7642). In addition to the beads, lithic technologies were similar in both sites. It appears that the shells were collected alive and selected for uniformity in size and their appearance. For example, luminous white or brightly coloured or patterned shells were preferred (Kuhn et al. 2001: 7642). Kuhn and others argued that the significance of the finds were that it showed a widespread use of beads throughout East Africa, the Middle East and Europe with standardised forms that had persisted over thousands of years. It appears that these shells are older than those in Europe.

1.9.3 Oldest beads in Europe

There are claims for beads older than 35,000 years in Europe but the examples are scarce, they generally turn up in isolation, and they are unique. For example, there was a claim for culturally perforated distal end of a wolf metapodal bone, vertebrae and other bone fragments at Bocksteinschmiede, Germany, dated to around 110,000 years BP (Marshack 1991). D'Errico and Villa (1997) disputed the claim, arguing that the perforations were animal gnawing marks. Also, a pierced bone fragment was recovered from Pech de L'Aze (France) Mousterian layer (Bordes 1969), dated 100,000 years BP. The perforation is thought by some

to be the result of erosion from natural weathering and not behavioural (d'Errico and Villa 1997; Davidson 1991). These objects do not display the usual production techniques for bead making like thinning, gouging, drilling or pecking. Davidson (1990: 53, 54) questioned the date and argued that the marks were a result of animal grawing.

The earliest substantiated evidence for beads in Europe comes from a pierced wolf canine and bear incisor dated to 43,000 years at Bacho Kiro, Bulgaria (Kozlowski 1982; 2000). Others (Zilhão and d'Errico 1999: 2) argue that there are beads from Chatelperronian sites that underlie the Aurignacian levels and that Neaderthals may have made beads.

From around 35,000 years BP, Aurignacian sites with beads turn up in abundance in Europe. For example, a site at La Souquette in France (Delage 1938) contains hundreds of beads made from ivory or steatite. The same production method (bifacially thinned and perforated ivory blanks) has been used to produce the finished beads (White 1989: 383). La Souquette and nearby contemporaneous sites at Abri Blanchard and Abri Castanet contained ornaments that displayed repeated patterning in manufacture and decoration. Other sites in Europe show similar technologies that characterise Aurignacian production of beads (e.g. Geissenklosterle and Sungir). Two adolescents and an adult male were among the bodies buried with thousands of ornaments at Sungir in Russia (dated c. 28,000 years BP). According to Randolf White (1989: 294), the man's beads would have taken over 2,000 hours to produce and each child over 3,500 hours. From this, White concluded that the extra energy used for the children's burials could indicate that the society was hierarchial where social status was handed on rather than 'achieved'.

Despite the challenges to the timing and authenticity of some sites, there is an acknowledgement that beads are important identifiers of the age of widespread symbolic behaviour. Beads from Australia have contributed to that knowledge.

1.10 Beads in Australia

At the time of early European contact, Australian Aboriginal people wore a variety of personal decoration. The decoration could be as simple as a necklace made from string or an elaborate headdress. The materials used for manufacture included fur/hair, bones, tails, feet,

teeth, talons, feathers and anything else that could be found. Another form of decoration was body scarring and/or smearing the body with ochre and grease from animal fats. For my study, I am only concerned with objects that were traditionally made by stringing segments onto twine and designed for suspension. The twine was made from animal hair, fur and sinews, human hair and - more commonly - vegetable fibre. Figure 1.2 shows a woman from the Northern Territory wearing personal ornaments.

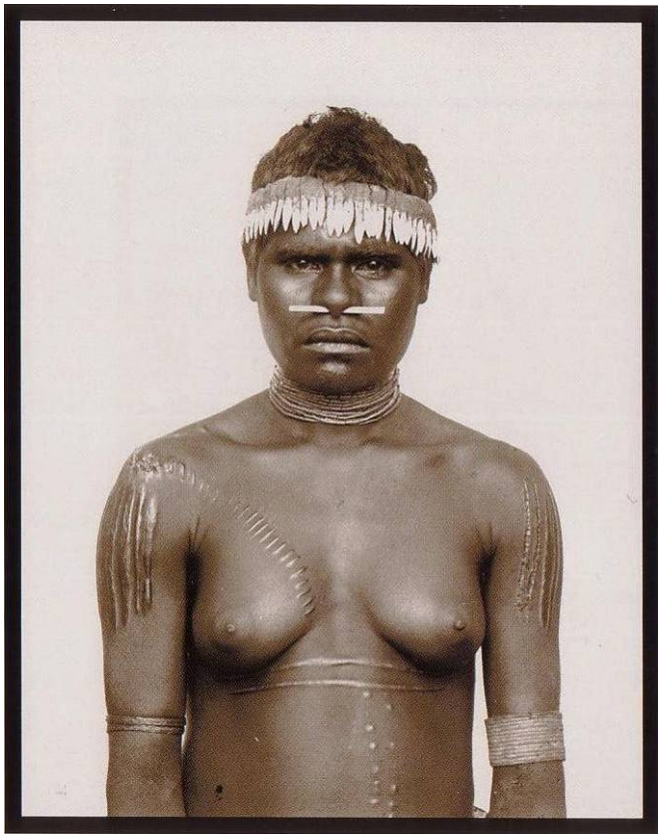

Figure 1.2. Woman from NT. Photograph taken by P. Foelsche c. 1883 (with courtesy of South Australian Museum)

In addition to the nose pin, arm bands and impressive body scarring, this woman was wearing two objects I am interested in: a necklace made from grass or reed segments (or bugles) threaded onto twine, and a headband made from macropod teeth that are attached to twine with resin or beeswax. The woman was wearing visual markers and she is also marked. The fact that she is wearing both could indicate that each signifies different things – the beads are removable and the cicatrices (scarring) are not. The two different forms of decoration could mean different things.

At the southern and opposite end of Australia, a Tasmanian man, shown in Figure 1.3, is depicted with ochred hair, body scarification and necklaces – one necklace made with shells.

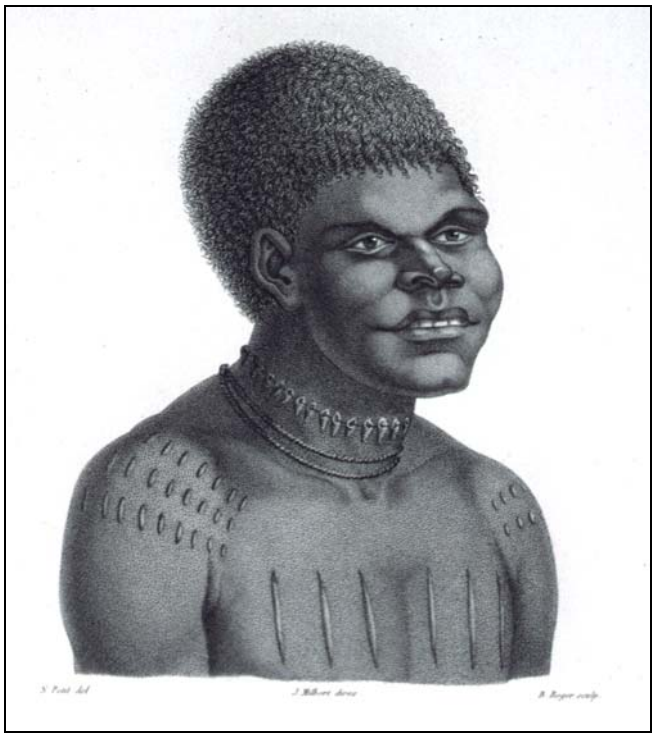

Figure 1.3. Bara-Ourou from Maria Island. Drawing from the Baudin Expedition 1802. Created by Roger, B (1767-1841). Digital image with permission of the Tasmanian Library, State Library of Tasmania.

This drawing shows people were wearing ornaments and marked with cicatrices at opposite ends of Australia and the cicatrices and ornaments were distinctive. They are not the same style or form, showing the degree of variation that can be found in these two forms of personal decoration. Some would also say that this suggests that the practice of ornamentation goes back before the isolation of Tasmania fourteen thousand years ago (Davidson 2007).

One of the major limitations of the study is access to literature about archaeological findings of beads in Australia. Many finds are made during consultancies and the reports that are produced are either not published or not available.

1.11 Importance to archaeology

This study will demonstrate the role of ornaments held in ethnographic collections as markers of past behaviours. Vanhaeren's (2002; 2005) work can be considered the model against which future studies of beads can be considered but there is a gap in Vanhaeren's work in the small mention of Australian Aboriginal beads. Australia has little, but important, archaeological evidence for beads. However, there are a large number of Aboriginal beads held in ethnographic collections and contemporary European literature exists to support the use and distribution of beads. A study of the spatial patterning of Australian Aboriginal beads has implications for the present assumptions about patterning of beads found archaeologically. For example, I have found in my study that there is some strength in Vanhaeren's argument that there are ethnolinguistic associations with bead distributions but I have identified there are different patterns for different classes of beads. This may be related to ethnolinguistic distribution for one class and not the other.

In this project, I will provide a framework for future studies for investigating the relationship between objects held in ethnographic collections, ethnohistoric writing and archaeology. Objects held in museums may be considered as valuable resources for interpreting the archaeological record.

1.12 Nature and order of presentation

1.12.1 Chapter 2 Beads as symbols

In Chapter 2, I will establish the symbolic importance of beads in an archaeological context and as ornaments for Australian Aborigines. The role of beads in the argument about the emergence of modern human behaviour and in previous studies of material culture and style will be provided. The theories discussed here will introduce possible explanations for the function and patterning of beads in Australia.

1.12.2 Chapter 3 Beads in the Australian landscape

Chapter 3 will provide background material for this study and emphasise the importance of beads to Australian Aborigines. I will start with a broad description of the research area, followed by a historical outline of the idea of culture areas and the use of drainage basins as

cultural markers. Further to that, the importance of beads as exchange objects in Australian Aboriginal society will be considered and possible trade routes outlined.

1.12.3 Chapter 4 Archaeology of Australian beads

In Chapter 4, I will describe the archaeological evidence for beads in Australia (including rock art). This line of evidence will be revisited in Chapter 11 in the context of early European accounts of beads and the ornaments held in ethnographic collections.

1.12.4 Chapter 5 Australian material culture studies

In Chapter 5, I will discuss the role of collections and collectors, and outline the previous Australian studies undertaken on material culture that are relevant to this project, in particular, those that are concerned with beads.

1.12.5 Chapter 6 Beads & early Australian literature

In Chapter 6, I will provide ethnohistoric accounts of Aboriginal beads written by contemporary European writers for the period up to 1940 (see Section 7.3.8). From the literature, I will describe Aboriginal beads in Australia, their function and distribution. From this chapter, I will establish the minimum range of objects that I should encounter in museums.

1.12.6 Chapter 7 Methods

In Chapter 7, I will explain how I approached the task of gathering data, the selection of variables and my method of analysis. The problems associated with the sample and working in museums will be outlined. The object of this chapter is to set up a framework for an analysis that will show similarities and differences in objects and investigate the patterning of distribution of material culture.

1.12.7 Chapter 8 Results: Classes and raw material

In Chapter 8, I will provide the classification of the data into two major classes - Class 1 (Series) and Class 2 (Pendants). The object of this and the following chapter is to nominate categories and to investigate the role of different levels of spatial units as identifiers of cultural boundaries. The broadest level of spatial unit will be drainage divisions, then Horton's (1994, 1996) divisions and finally locations.

1.12.8 Chapter 9 Results: Shell beads

Chapter 9 provides the classification of shell forms and their frequency and distribution within spatial units. I will nominate categories of bead ornaments manufactured from shell. I will use the same process to present the results of other raw materials in Appendices 14-16. Appendix 14 will provide classification of grass or reed bugles, Appendix 15 classification of teeth ornaments and Appendix 16 for seeds, vertebrae and other materials.

1.12.9 Chapter 10 Results: Metric analysis, decoration and classification

This chapter summarises the results of the classification and distribution of all beads in the sample, the richness of sub-forms within spatial units, standardisation of metric variables and the degree of value added in the form of decoration.

1.12.10 Chapter 11 Discussion and conclusion

In Chapter 11, the results of Chapters 8-10 and Appendices 14-16 will be drawn together and deliberated in context with evidence from archaeology and early European literature. First, I will discuss the results of forms and raw materials. Then I will assess the role of spatial units as cultural markers. The results of the analysis will be considered relative to the aims, questions and theoretical explanations central to this work.

CHAPTER 2 BEADS AS SYMBOLS

2.1 Introduction

The symbolic nature of beads was introduced in the previous chapter. In this chapter, I discuss beads as symbolic markers for interpreting the archaeological record. Archaeologists have used the spatial variation in beads (Vanhaeren 2002; 2005; Vanhaeren and d'Errico 2006) to build theoretical approaches to understanding the behaviour of past humans. I will begin this chapter by providing a brief summary of the arguments for the emergence of modern human behaviour and the role of beads in the argument. I will follow on with an evaluation of the current studies about the function of beads. I discuss this literature before outlining the broader issues of style in material culture as personal and social identifiers. One approach is to consider the possibility that beads allowed people to make distinctions that we now address through the wearing or non-wearing of clothes. I will provide ethnographic accounts of how Australian Aborigines dressed/undressed and the role of beads as dress.

2.2 Emergence of symbolic behaviour

Archaeologists and anthropologists have debated for decades about the origin and dispersal of modern human behaviour and, conversely, the relevance of investigating behaviours to identify modern humans in the archaeological record (McBrearty and Brooks 2000; Noble and Davidson 1991). The disagreement is about when humans or other hominins began behaving in a modern fashion, or, as humans act now, and whether the modern behaviour appeared suddenly or gradually. Added to this, there is contention about whether the term 'modern human behaviour' is appropriate for describing the transition that is evident in the archaeological record. Some argue that particular behaviours coincided with enhanced cognitive abilities, language, and symbolic storage (Noble and Davidson 1991).

Authors have argued that components indicating modern human behaviour include new subsistence strategies, increased geographic range, lithic technology, use of non-lithic materials, language, art, burials and the wearing of apparently non-functional personal ornaments such as beads and pendants (d'Errico 2003; d'Errico et al. 2003; d'Errico et al. 2005; Henshilwood and Marean 2003; Klein 1992; 2000; Noble and Davidson 1991). These traits are identified as markers of 'modern' behaviour. For example, Noble and Davidson (1991: 223) see the emergence of language as a trait that is 'specific to modern humans' and 'underpins all modern human behaviour' Davidson (2007: 75) argues that language is an essential component that led to 'information flow; planning depth; and conceptualisation'. The trait approach was de-theorised by McBrearty and Brooks (2000) who offered a greater number of traits but later Henshilwood and Marean (2003: 534) returned to the symbolic argument, arguing that 'behavioural innovation drove the morphological changes that are observed in early modern human anatomy'. Whatever the view, beads feature prominently in the argument (Davidson and Noble 1992) and are seen generally as clear evidence of symbolic thinking .

Proponents of the early revolution model (Later Upper Pleistocene) argue there is a sudden shift in hominin behaviours that signified the sudden arrival of anatomically and genetically modern humans in the archaeological record around 50,000 to 40,000 years ago (Bar-Yosef 1998; 2002; Binford 1984; 1985; 1989; Chase and Dibble 1990; Klein 1989; 1992; 1995; 2000; Mellars and Stringer 1989; Noble and Davidson 1991; 1996; Tattersall 1995; White 1982; 1989; 1993). Traits that identify modern humans included worked bone and antler, stone artefact technology, standardisation of artefact types, complex hearth constructions, expanded exchange networks, foraging strategies, use of harsh environments and symbolic behaviours such as use of ochre for decoration, burials, art, and ornamentation (including beads). In Africa, these traits repeatedly appear then disappear, then turn up again until they are consistent during the Holocene.

Most supporters of the model have agreed that modern humans possessing these innovative behavioural traits moved out of Africa, into Eurasia and arrived in Europe somewhere between 35,000 to 40,000 years ago, replacing other hominin forms. Davidson and Noble (1992: 138, 140) argue that language was necessary for conceptualising ideas that led to the 'upsurge of regional patterning from the middle of the Late Pleistocene'.

The original dates proposed for the appearance of modern human behaviour has been the cause of much of the problem. Anatomical and genetic evidence for modern humans may date to 130,000-195,000 years with claims for modified ornaments 40,000-130,000years (Davidson 2008; Kuhn et al. 2001; McBrearty and Brooks 2000; McDougall et al. 2005; White et al. 2003). New archaeological evidence has forced a rethink of the standard revolution model and the discovery of beads, such as those from Blombos Cave in South Africa, are central to that re-evaluation (Bouzouggar et al. 2007; d'Errico et al. 2005; Henshilwood et al. 2004).

An alternate view to the revolution model is for a gradual change over a much longer period for the evolution of modern human behaviour (Barham 1996; 1998; 2001; Henshilwood et al. 2004; Henshilwood et al. 2002; Henshilwood and Marean 2003; Knight et al. 1995; McBrearty and Brooks 2000). Others believe that modern behaviour, including symbolism, developed at different times in different places and was not restricted to humans (d'Errico et al. 2003; d'Errico et al. 1998; Zilhão and d'Errico 1999). Most models are based on the emergence of traits and McBrearty and Brooks (2000) have questioned the value of using traits to interpret modern human behaviour. In addition, McBrearty and Brooks draw attention to the fact that most studies have been undertaken from a Eurocentric viewpoint and that trait lists are drawn from modern behaviours. However, McBrearty and Brooks recognised the value of bead production as one of the traits useful for identifying past symbolic behaviour:

> Pigment processing and bead production, in particular, are comparable in kind to that seen in the Africa LSA and European Upper Paleolithic, and it is not extravagant to suggest that they functioned within a shared symbolic system. (McBrearty & Brooks 2000: 531.)

Other authors have recognized the Eurocentric approach for interpreting behaviours in the archaeological record. An important review of the models for explaining the evolution of human behaviour was undertaken by Henshilwood and Marean (2003). The authors point out that studies based on empirical trait lists are of little significance unless grounded in theory. Henshilwood and Marean (2003: 635) agreed that 'social intelligence and symbolically organized behaviour are modern human behaviour' and that Chase and Dibble (1987) had it right when they wrote that a common aspect of modern communities, despite 'cultural'

differences, was that their behaviours were modified by symbolism. They support Deacon's (1997: 70) definition of symbolism:

> Symbols are representative of social conventions, tacit agreements, or explicit codes that link one thing to another and are mediated by some formal or merely agreed-upon link. (Henshilwood and Marean 2003: 635)

Henshilwood and Marean (2003: 635) define modern human behaviour:

> …behaviour that is mediated by socially constructed patterns of symbolic thinking, actions, and communication that allow for material and information exchange and cultural continuity between and across generations and contemporaneous communities.

Henshilwood and Marean refer to Wadley's (2001) work that relates symbolic storage to archaeology. Art, lithic styles, social use of space and personal ornamentation are seen as indicators of external symbolic storage- a concept that comes from Donald (1991). Personal ornaments, including beads, are generally accepted as external symbolic storage of cultural identity that archaeologists use to identify modern human behaviour. Wadley's argues (2001: 208) that it is not the artefact itself that indicates symbolism but the *use* of the artefact to define individual or group identity (my emphasis).

Henshilwood and Marean (2003: 635) suggest that 'words in a languages are symbolic signs because their meanings are given by convention and they have a referential function', which is view adopted from Noble and Davidson (1996: 112). Henshilwood and Marean (2003: 636) go further to add that syntactical language was essential 'for encoding these symbolic referents', possibly emerging at the same time in a period of social and demographic pressure (though they offer no evidence of social or demographic pressure).

Some authors see personal ornaments as a means of measuring other aspects of human behaviour including language:

> Personal ornaments are a more direct proxy for language diversity. Since ornaments tend to be ubiquitous at Upper Paleolithic sites, they provide the potential for the future identification of ethnolinguistic boundaries and even social group and personal identity. (d'Errico et al. 2003: 56)

The symbolic aspect of personal ornaments is generally accepted and has been significant in understanding past geographic patterning. The function of beads has been investigated by some researchers, which I will discuss in the following section.

2.3 The function of beads

Randall White has been one of the strongest advocates of the revolution model and his research includes ornaments from archaeological sites in Europe. Based on the evidence at the time, White (1982; 1989; 1992) argued that the Upper Palaeolithic in Europe was characterised by increased population, more social aggregation, highly developed stylistic components to lithic artefacts, and the appearance of ornaments that exhibited imposed form and stylistic variation. Personal ornaments were being used to store information about personal or group identity.

Later, White (1993: 296) argued that the standardisation of technology and final form of 'beads' across Europe during the Aurignacian was related to populations stating their regional identity. Also, he asserted that ornaments were a fundamentally important component of the early Upper Palaeolithic, and related to complex social systems, which had evolved prior to, and independent of, agriculturally based economies. More recently, White (2007) outlined the view that any meaningful study of regional ornamental systems must address the technological, aesthetic and symbolic content of objects to understand their social construction and the objects need to be placed in an archaeological context. In fact, the act of manufacturing the object may contain as much symbolic information as the finished product.

Of paramount importance for this study is the work undertaken by Marian Vanhaeren (2002; 2005), who has investigated the multiple roles of beads and their importance in the debate about the emergence of symbolic behaviour. Vanhaeren surveyed ethnographic literature for use of ornaments in 'hunter-gatherer and small scale societies' from Europe, Africa and other countries, including Australia. Vanhaeren (2005: 527-532) identified the following functions for bead use:

- aesthetical expression and self-assertion;
- courtship;
- social markers;
- individual markers;
- ritual objects;
- offerings;
- amulets and talismans;
- prophylactics (protection against sickness or disease);

- exchange media;
- inalienable possessions (beads may be symbolic properties that prevent their being transferred or taken away);
- communication systems (symbolic storage of information); and
- counting devices.

Vanhaeren (2005: 525, 533) argues that a 'single beadwork' could serve more than one function and functions could change within and between different societies. Vanhaeren pointed out that ethnographic information from hunter-gatherer societies could be useful in investigating beads found in the archaeological record. From her studies, Vanhaeren argued the main function of African Middle Stone Age beads:

> Cross-cultural survey of personal ornament use in traditional societies suggest the main, though certainly not exclusive, function of MSA beads was, as for known San societies, that of an exchange media used in gift-giving systems, the role of which is to strengthen networks of social and economic relationship. (Vanhaeren 2005: 542)

The properties viewed by Vanhaeren that support this theory included:

- the beads were highly standardised;
- raw material was locally available, the use of the same material maintained an equality of the value of the goods; and
- manufacture of goods did not require specialised craftsmanship.

Vanhaeren (2005: 542) interpreted the main function of beads from the Early Upper Palaeolithic in Europe as 'integrated markers of ethnic, social and personal identity'. Vanhaeren based this conclusion on regional patterning unrelated to availability of raw material.

Vanhaeren summed up her finding about prehistoric beads:

> In Africa beads had the function of reinforcing reciprocity networks to ensure the survival of hunter-gatherer groups in times of stress. Beads were used in Europe to strengthen affiliation to a group and to manifest social and individual roles within the group. (Vanhaeren 2005: 542)

Vanhaeren's argument that the function of African beads was to reinforce reciprocity is supported by Polly Wiessner (1982: 61-62) as discussed later in this chapter.

Vanhaeren's study is important to this project because it is concerned with the function of beads in past hunter-gatherer societies and explanations for the patterning of styles or forms based on ethnographic hunter-gatherer societies. However, as I indicated in Chapter 1, there is only minor reference to Australian beads in Vanhaeren's work, even though Australia has beads over 30,000 years old (Balme and Morse 2006), ethnographic material held in museums and literature about hunter-gatherer use of beads written by contemporary Europeans. The application of Vanhaeren's approach is appropriate for studying Australian Aboriginal beads. A survey of Australian ethnohistoric literature that describes Australian beads will test Vanhaeren's assumptions. Vanhaeren has determined two different main functions for beads for the European Early Upper Palaeolithic and the African Middle Stone Age from the distribution of selected elements. For example, products made from locally available material versus products made with from exotic materials. Will the Australian data prove that Vanhaeren's assumptions are too simplistic?

Vanhaeren and d'Errico (2006) followed on from Vanhaeren's study using GIS, seriation and correspondence analysis to investigate patterning of bead types at European Aurignacian sites. The 'cultural geography' they identified for personal ornaments did not coincide with that of other material culture for the Aurignacian. Vanhaeren and d'Errico (2006: 1107) concluded that the patterning of symbolic storage was a reflection of ethnolinguistic diversity and not raw material or chronological differences, and that personal ornaments were the 'trump card for addressing this issue'. Vanhaeren and d'Errico argued that some of the main advantages that beads offer for analysis include their variability, they are symbolic, widely used by recorded hunter-gatherer societies and common in Upper Palaeolithic sites. Of interest to my study, Vanhaeren and d'Errico's (2006: 1118) rejected the hypothesis that 'the observed pattern is determined by raw material availability'. They found raw material was available in sites but not used for making beads while exotic material was used in some areas. For example, in some clusters of coastal sites there was minor use of shells for beads although suitable shell was abundant and regional differences in beads reflected cultural geography.

Vanhaeren and d'Errico (2006: 1107) draw attention to the fact that 'the potential of personal ornaments has remained largely unexplored'. This is particularly true of Australian material.

Spatial patterning of similarities and differences in raw materials and bead forms will be a useful contribution to studies already undertaken in Europe.

It is clear there is an accepted opinion that ornaments are indicators of symbolic behaviour. Beads display a great degree of variation in raw material and style and variation of style in material culture has been a well established approach for investigating past societies (Conkey and Hastorf 1990).

2.4 Style and material culture

In this section, I will present some of the approaches for explaining variation of style in material culture. I will not attempt, in this work, to synthesise or define the whole debate regarding style but I will give a brief outline of major approaches. As can be seen from the previous section, it is generally accepted that personal ornaments played a major symbolic role in early societies and were an important element for identifying behavioural modernity in the archaeological record. Style within beads has often been the tool for assessing variation.

Claire Smith has summed up the social properties of style:

> Style can vary systematically according to the situated positions of both producer and interpreter and the differing strengths, possibilities and constraints of different raw materials. Moreover, each raw material has inherent qualities that make it particularly suitable for specific social uses. (Smith 1994: 260)

This is particularly relevant to the study of beads. Beads are manufactured from a variety of raw materials and produced in multiple forms. If the function of beads can be identified, then this has implications for interpreting the archaeological record and researchers have attempted to do just that.

2.4.1 Early explanations of style and material culture

The normative approach was one of the early theories for investigating style. In this approach style was seen as both a chronological and geographic marker. Past cultures could be identified to time and space by the presence/absence of patterning in objects. With this theory, cultures without outside influences are stable and changes result from trade,

migrations and diffusion influences (Childe 1925; Davidson 1937; Piggott 1954; Rappaport 1968). I will discuss this further in the following chapter in the section about culture areas.

During the late 1950s and 1960s, processual archaeology became fashionable. Processual theorists think the normative approach looks at the material only and do not address the complex behaviours that exist within a single culture (Smith 1994: 8). There was a need to look beyond the material and to look at anthropological and scientific methods to understand the archaeological record. Processual supporters argued that variation in the archaeological record could be due to functional and contextual processes within a system rather than between systems (Binford 1962; 1965; 1968; Binford and Binford 1966; Clarke 1968; Flannery 1968; Willey and Phillips 1958). Binford wrote about the then current explanations for variation in the archaeological record:

> I suggest that this undifferentiated and unstructured view is inadequate, that artifacts having their primary functional context in different operational subsystems of the total cultural system will exhibit differences and similarities differentially, in terms of the structure of the cultural system of which they were a part. Further, that the temporal and spatial spans within and between broad functional categories will vary with the structure of the systematic relationships between sociocultural systems. Study of these differential distributions can potentially yield information concerning the nature of social organization within, and changing relationships between, sociocultural systems. In short, the explanation of differences and similarities between archaeological complexes must be offered in terms of our current knowledge of the structural and functional characteristics of cultural systems. (Binford 1962: 21, 22)

Binford (1972: 431) realized that the environment played a part in shaping the way people lived and wrote 'culture is all those means whose forms are not under direct control which serves to adjust individuals and groups within their ecological communities'. That is, variation in hunter-gatherer societies resulted from behavioural strategies designed around resources (Binford 1980). This approach concentrated on the scientific testing of hypotheses – methods that measured the 'stylistic' differences in materials. In effect, Binford wanted to replace one theoretical approach (normative approach) with another (systematic approach) (Conkey 1990: 9).

Binford (1978; 1979) proposed that the Middle Range approach was more scientific for studying material and that past culture could be interpreted by analysing the components left behind. Binford wanted to interpret Ice Age material from France. As a method of understanding people's behaviours and responses to that type of environment, Binford spent

time studying the Nunamiut people of Alaska. Binford then related his findings to artefacts from the Palaeolithic in Europe.

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Although processual archaeology was popular at the time, supporters of the normative approach persisted in Europe and North America until the 1980s (Smith 1994: 9). A turning point in the study of style and its interpretation for the archaeological record was presented by Wobst (1977).

2.4.2 Style as information

Wobst's (1977) theory developed from semiotic thought proposed independently by Charles Peirce and Ferdinand de Saussure. Wobst suggested that the approach and interpretations of previous archaeological stylistic analysis was inadequate and proposed his information exchange theory as an explanation for the relationship of differences/similarities of style, cultures and the environment. Wobst thought the then common explanation for style of 'enculturation and acculturation, via learning theory' was incomplete and he suggested that the function of style could be investigated by considering artefacts as symbols and researchers should consider:

> …the role of artifacts in information exchange as, for example, in the symboling for territory or social boundaries, in the context of ritual, in the support of ethnicity, or in maintaining or strengthening mating networks, exchange relationships, and structural poses. (Wobst 1977: 320)

Wobst (1977: 331) saw variation of style in artefacts as a means for encoding information. According to Wobst, artefacts were useful tools for delivering information and one of the great advantages of using matter in this sense was that information could be used to communicate messages without the presence of receivers. Wobst used folk dress worn in Yugoslavia to test his theory. He defined three visual categories. The most highly visible was hats and overcoats as they could be seen over a greater distance. Headdresses were most likely to contain information about ethnic identity. The other two categories conveyed information about smaller categories, for example shoes are visible over short range and underwear and jewellery that may not be seen outside the household. Wobst argued that the more highly visible an artefact, the more suitable it is for conveying information to people from outside a group, whereas material culture that is not so highly visible is unlikely to hold information for outsiders. Following on from this, as an example, Wobst reasoned that outer

layers of clothing were highly visible and therefore have potential to convey information in a social context to a wide audience.

In his study, Wobst (1977: 332, 334) placed 'jewellery' in a category that could be seen at short range and contain messages for friends and relatives. However, Wobst's study involved clothing. Ornaments on a naked body would place the ornament in a different context to those on clothing. Instead of being an accessory to clothing, they are in fact the only dress worn. I believe that ornaments would be more visible on a person not wearing clothing, particularly the larger pendants. From my perspective, according to Wobst's theory, the larger or more spectacular beaded objects should be worn in a prominent position and contain more information about ethnic identity. Countering this, smaller, less spectacular objects were more likely to be worn in a less prominent position and contain information related to a smaller group.

Wobst's approach has been used by researchers in Australia. June Ross (1997) undertook an analysis of the spatial distribution of anthropomorphic motifs depicted in rock art in north western Queensland. The sites were associated with one of the trunk trade routes in Queensland. She identified a dichotomy of simple/elaborate motifs:

- the majority of motifs were small monochrome figures with no detailed design. The motifs were not highly visible and associated with rock shelters but not with regular water or archaeological material. Although some motifs displayed some differences across space, there was little difference in the basic form.
- the second group consisted of unique motifs with detailed bichrome or polychrome designs. The motifs were highly visible and statistically associated with reliable water.

From her analysis, Ross (1997: 128) established that the art style was 'regionally distinct and relatively recent'. The motifs were associated with boundaries and Ross argued that the smaller more standardised motif was intended for a local audience because the similarities in form could communicate information that was regionally understood. The larger less standardised motifs could be easily seen by non-local travellers as they followed along routes with reliable water. Ross summed up her argument by suggesting:

> …increased social interaction resulting from the opening up of extensive large scale trading networks throughout the Lake Eyre Basin produced an uneven

> relationship between those groups with access to scarce resources and those without. Pressure created by the demand for a scarce and valued resource necessitated a mechanism which not only linked the territory containing the resource, but signified that in acknowledging the group identity, outsiders would moderate their behaviour in some manner thus reducing the threat to the owners. (Ross 1997: 151)

If the same occurs for beads, then the larger, less standardised objects would be for non-locals and the smaller, more variable ornaments for local use.

Following on from Wobst's theory, Gamble (1982: 102) maintained that hunter-gatherer information exchange networks could be identified in the archaeological record. Areas poor in resources would produce cultural homogeneity while areas rich in resources would produce variation. People living in poor environments needed open social networks to access resources and mates, while those living in rich environments would have more closed social networks (Gamble 1982; 1986; 1996). Gamble (1982) argued that the Venus figurines of the Upper Palaeolithic were part of a communication system that enabled people to live and reproduce in harsh environments. If a similar argument works for beads, then beads should be more homogeneous in the harsher environments of Australia while there should be greater variation in the resource rich areas.

2.4.3 Contextualism

Ian Hodder (1982a; 1982b; 1982c; 1986; 1989), a pioneer of postprocessualist theory in archaeology, investigated the relationship between structure, context and agency. Hodder understood that:

> Material culture patterning is a distorted but predictable reflection of human behaviour. Material items of all forms function to enhance adaptation to the physical and human environment. (Hodder 1982c: 11)

From his study of the Baringo people in Africa, Hodder concluded that

> …in the Baringo area material culture does reflect and express groups and their competition, it is also clear the material symbols can actively justify the actions and intentions of human groups. (Hodder 1982b: 36)

Hodder held the view that material culture of hunter-gatherers expressed human adaptations within an ecological framework in a non-passive manner. Placing material culture in context

is now an important approach to modern studies and is of particular relevance to this type of study of Australian Aboriginal material culture. The variation of style in hunter-gatherer objects can supply information on social and individual identity.

2.4.4 Style - social and individual information

Polly Wiessner (1983: 256) defined style as 'formal variation in material culture that transmits information about personal and social identity'. In her study of style in material culture of Kalahari San, Wiessner (1983: 273) commented on the lack of 'any coherent theory of stylistic behaviour in the archaeological record' and recognised two widely used approaches at the time. These included Wobst's (1977) approach and one other approach that maintained that the more stages of transformation an object went through, the more chance it would have encoded information (Wilmsen & Roberts 1978 in Wiessner 1983: 259).

Wiessner addressed both of those methods in her ethnographic study of material culture from three language groups of the Kalahari San people to investigate how social information could be encoded in material culture of hunter gatherer societies. Wiessner made an inventory of all material culture of the groups then she focused her study on projectile points and, later, glass beads. Wiessner chose attributes that showed variation within the assemblage for her analysis (e.g. shape, symmetry, length) and tested the assumed variation with statistical tests. Wiessner hypothesised:

> Here I will suggest that at least two very distinct aspects of style exist and that these each have a different referent, contain very different kinds of information, may be affected by different conditions, generate a different pattern of variation, and thus require different methods of analysis. (Wiessner 1983: 257)

From this Wiessner defined two styles within the objects – Emblemic and Assertive styles:

- Emblemic style expresses social identity and carries information relating to boundaries and groups. The message is strong and therefore must be uniform and clear; and
- Assertive style is a discreet method of showing personal identity within a group.

The more stages of transformation the object is subjected to, the greater the probability that object contains social information (Wiessner 1983: 259). Wiessner saw two ways of

measuring stylistic content: spatial variation in form or type; and the percentage of the object that has added decoration.

In an earlier publication, Wiessner (1982: 61) thought that studies of hunter-gatherers from an ecological structure, where socioeconomic aspects are directly linked to the environment, provided only partial understanding of hunter-gatherer lifestyles. Wiessner pointed out that her studies of the !Kung San had showed a structured social system that reduces risk. Systems can 'permeate many areas of life, and have their own effects on the economy of hunter-gatherers, effects that can not be predicted from environmental variables alone' (Wiessner 1982: 62).

From that study, Wiessner concluded that families reduced risk by maintaining delayed exchange of gifts. !Kung children entered into 'symbolic training' for the exchange system between the ages of six months and one year of age. Beads play a major role in the training. Grandmothers give beads to a child when it is aged between six weeks and six months. When the child is between six months and one year of age, relatives cut off the child's beads then place them in the child's hand for the child to offer to another relative. This training is carried out until the child is old enough to remove the beads unassisted. Later, the child extends the ritual to members of other camps and eventually into the overall network of exchange, thus maintaining ties within the network through the symbolic storage of beads (Wiessner 1982: 72-73). As far as I know, beads were not used in this way in Australia but they were part of both local and long distance exchange systems.

Wiessner (1991: 58) argued that 'if style is seen as a means of communication used in the fundamental human cognitive process of identification via comparison' there were implications for archaeology. First, the aspects of style in all cultures can be examined from this point of view. Second, historical aspects of a culture can be compared by investigating stylistic data in context by looking at other classes of data and examining changes through time and space. Third, if style in objects contains information about social identity, then style should communicate information relating to boundaries, groups and interaction within and between groups. Last, the role of the individual within the group is important for the balance of the group. Individuals must know their place within the social, political and economic realms of the culture for the group to function efficiently.

As an example, Wiessner (1984) noted the surge in stylistic expression in !Kung San beadwork in comparison to other areas. Traditional life was interrupted when the San people were placed into a government scheme and this caused an eruption of new personal expression in the beadwork. There are some similarities between the outside cultural interferences forced upon the San people and the Australian Aborigines. European expansion throughout Australia impacted greatly on the indigenous people and a similar study into material culture could determine the degree of impact by comparing data gathered in areas of low impact with areas of high impact both spatially and over time. However, no comparable studies have been undertaken.

In later work, Wiessner (1983; 1984; 1985; 1989; 1990) maintained her belief that personal and social identification could be communicated through style. Weissner identified the fundamental process for linking human behaviour and material culture was through studying similarities and differences.

I will not address change over time in this study because a high proportion of the data have not been assigned a definite time of collection but are more related to when the objects were entered into registers. However, Wiessner's approach is suitable for a study of Aboriginal Australians beaded objects held in museum collections to investigate stylistic similarities or differences over space in an archaeological context. According to Wiessner's model, I should find standardised beads relating to social and boundary information and more variation within groups to state personal identity. Added to that, objects with more transformations will store more information.

Other ethnographic studies have looked at ornaments as important markers of political, religious, social and individual markers. Certain styles and raw materials of ornaments, including beads, have been linked to the status of individuals within a community in eastern Africa (Kassam and Megersa 1989). Also, the durability of materials for manufacturing beads has been investigated. Kleppe (1989) theorised that Divine Kingdom societies in northern Africa could be identified in the archaeological record by examining material culture.

To test his theory, Kleppe compared non-perishable objects from two 'divine kingdoms' in Africa – the Shilluk in the Upper White Nile in the Sudan and the Bafut from the Grassland kingdoms of Cameroon. Those kingdoms had many similarities and had direct cultural contact. Kleppe found that beaded ornaments played symbolic roles as social, ethnic, individual and political markers. For example, during a coronation ceremony, the leader of the elders wore a grass necklace. Kleppe pointed out that the wearing of a perishable object by such an important man could mean that the object was made for the one occasion. Kleppe stressed that the ornaments must be placed in context to understand their function.

There has been some criticism that ethnographic material referring to bead manufactured from perishable material has not been investigated in Europe (Marshack 1991). However, perishable objects such as grass necklaces are difficult, almost impossible, to detect in the archaeological record. Australian Aborigines wore grass necklaces (and still do) and an ethnographic investigation of their spatial patterning could shed light on the use of perishable/non-perishable beaded objects in Australia in the past.

The role of stylistic patterning of material culture, including beads, has been a well established method of investigating the archaeological record. Each new theoretical approach has been seen as a step forward in study of style (Conkey 1990: 5). For my study, I support Wiessner's approach and will look at the similarities and differences in style of beads to determine if the function of beads can be identified. I will select variables on beads that can show similarities and differences and determine the degree of added value to the object. Vanhaeren's functions will be considered in relation to the ethnographic accounts for the use of Australian Aboriginal beads and patterning examined in relation to Vanhaeren and d'Errico's (2006) argument that ethno-linguistic diversity may explain geographic patterning.

In the next section, I will discuss early European writings of the worth of clothing and ornaments in Australian Aboriginal societies and European attitudes towards the wearing/non-wearing of clothes and ornaments.

2.5 Australian Aborigines – clothing and ornaments

The purpose of this section is to assess the character and function of clothing in Aboriginal societies and to establish the importance of beads as 'dress'. The Aboriginal practice of marking the body and wearing ornaments was widespread in Australia at the time of first European contact. While body scarring was a permanent marker, ornaments were removable and most often Aborigines were seen with no ornamentation or any other form of dress.

During their first encounters with Australian Aborigines, Europeans commented on the nakedness of the 'natives', and generally considered the non-wearing of clothing as primitive. Some considered that once an Aborigine adopted European clothing and accessories, then that Aborigine was in the process of becoming civilised. For example, Figure 2.1 shows a sketch of an Aboriginal man from the Herbert River district in north-eastern Queensland. Lumholtz was in that district in 1882 or 1883 (Lumholtz 1908: Preface, 2nd page).

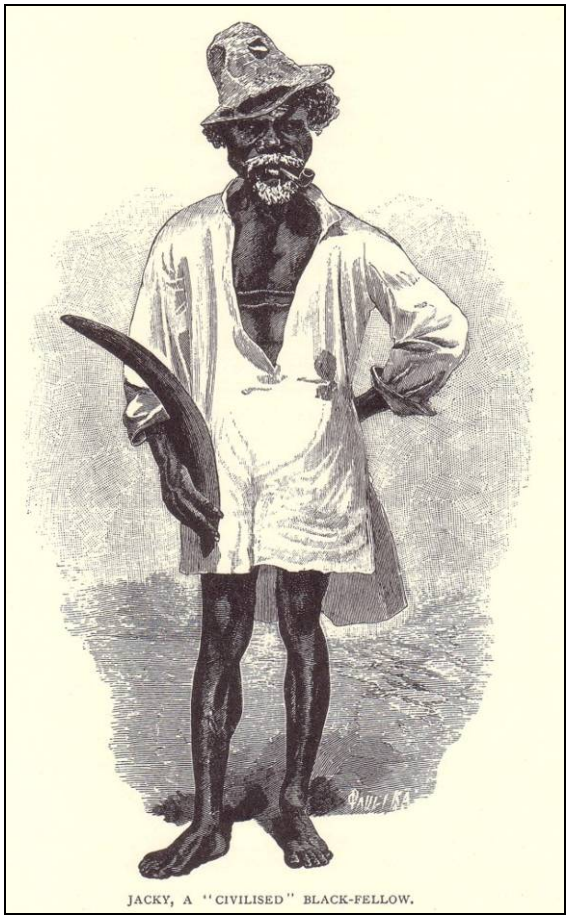

Figure 2.1 Aboriginal man from north-eastern Queensland adapted from Lumholtz (1908: 90).

In the sketch above, the Aboriginal man is shown with cicatrices (scarring) on his chest and holding a boomerang. In contrast, he is wearing a European white shirt and hat and smoking

a pipe. What message the Aboriginal man thought he was displaying is unknown, but his partially clothed state indicated to Lumholtz (1908) that the man was in the process of attaining 'civilisation'. Lumholz (1908: 76) stated:

> To know that they will be killed if they murder a white man, to be fond of wearing the garments and ornaments of white people, and to smoke tobacco, is all that is required in order to be styled "civili[e]d" among the Australian blacks.

Early Europeans have commented on the state of undress of Australian Aborigines. For example, in 1777, at Adventure Bay, Bruny Island, Tasmania, Captain James Cook's party encountered a group of Aboriginal men. Cook noted:

> They were quite naked, and wore no ornaments, except the large punctures or ridges raised on the skin, some straight and others in curved lines. (Beaglehole 1969, Vol 1: 52)

Later, when Cook's party came across women in Tasmania, they noted:

> …some with children on their backs, and some without children. The former wore a kangaroo skin fastened over their shoulders, the only use of which seemed to be to support their children on their backs, for it left those parts uncovered which modesty directs us to conceal. Their bodies were black, and marked with scars like those of the men. (Beaglehole 1969, Vol 1: 424)

Again in Tasmania, French sailors, feeling the cold, were in awe of Aboriginal nakedness:

> It appeared to us very astonishing, that in so high a latitude, where, at a period of the year so little advanced as the present, we already experienced the cold at night to be pretty severe, these people did not feel the necessity of clothing themselves…Some of them only had the shoulders and part of the back covered with a kangaroo's skin. (Labillardière 1800: 296)

In 1856, A.C. Gregory, led an expedition of exploration to the Gulf of Carpentaria and down towards Moreton Bay. I could find no description of ornaments throughout the journal (Gregory and Gregory 1884) relating to the trip other than the comment that Aborigines were marked with cicatrices. While travelling through the lower Gulf country, they encountered Aborigines. Gregory commented:

> These blacks were not circumcised, and their teeth were perfect; they had neither ornaments or any description of clothing, and were slightly scarred on the back and chest. (Gregory and Gregory 1884: 173)

In this case, it is most likely that the Aboriginal people were going about their daily business and had no need to identify themselves to each other or outsiders, hence the lack of portable ornamentation.

Many of the earliest European visitors to Australia commented on the state of Aboriginal undress from a Eurocentric viewpoint, misunderstanding the unimportance of European clothing to Aborigines. For example, in 1789, in the new settlement at Port Jackson, New South Wales, a newcomer wrote of the Aborigines:

> …though they have not made any attempt towards clothing them(s)elves, they are by no means in(s)en(s)ible of the cold, and appear very much to di(s)like the rain…Governor Philip was convinced…that clothing would be very acceptable to them. (Philip 1789: 138) (My corrections – changed 'f' to 's' in parenthesis.)

Subsequently, Governor Philip ordered jackets and frocks to hand out to the Aborigines.

In his article about simple/complex clothing and Tasmanian Aborigines Gilligan (2007: 104) wrote about clothing:

> …at a psychological level, regular use of clothing…can promote a sense of shame or modesty in relation to the unclad body, which again will encourage the use of clothes at a social level in addition to, and almost regardless of, environmental conditions.

Aboriginal people were not aware of their nakedness until Europeans arrived. European morality was imposed on Aboriginal people, in some cases enforced with brutality. For example, in the Lake Eyre District in Central Australia, George Aiston (policeman) and his co-author, George Horne, observed

> Clothing and many decorations are, of course, borrowed very largely. A cut with the whip was sometimes the black's fate if caught without clothes; so, until they knew us, our coming was the signal to hurry into a tattered shirt or a pair of trousers, or a skirt. (Horne and Aiston 1924: 11)

In north-western Queensland, Walter Roth noted the Aboriginal compliance to white morality:

> With both sexes the privates are only covered on special public occasions, or when in close proximity to white settlement. (Roth 1897 Ch. VII, Sect. 184)

In these two cases, Aborigines were wearing European clothing to avoid punishment or to seek approval from whites.

Authors had a different viewpoint of the attractiveness of clothed or unclothed Aborigines. For example, Ernest Giles, explorer (New South Wales and Western, South and Central Australia) wrote the following comment on meeting naked women in Central Australia in 1875:

> However charming woman may look in a nude or native state, with all her youthful graces about her, still the poetic line, that beauty unadorned, adorned the most, is not entirely true. Woman never appears so thoroughly charming as when her graces are enveloped in a becoming dress. (Giles 1889, Vol. 2: 102)

Others thought that European clothing did not enhance the natural beauty of Australian indigenous people. Charles Mountford, an anthropologist, travelled to many remote parts of Australia, including Central Australia, Arnhem Land and Melville Island. While travelling through Central Australia with a group of Aborigines during the mid-1900s, Mountford asked a young Aboriginal woman (named Numidi) to trade her dress. It seemed that Numidi was always in the background when Mountford was trying to take photographs and he thought the photographs were untraditional as a result. The dress was old and ragged but Numidi was the only Aboriginal female who had a dress on the trip. Eventually she traded the dress for numerous goods including sweets. Once she had eaten the sweets, she wanted the dress back. Later, when Numidi slipped the ragged dress over her head, Mountford wrote:

> To see Numidi before and after I gave her that dress was to see a slim, lovely body suddenly change into a ragged scarecrow; and the same changes take place when a native man dons the cast-off garments of Europeans. (Mountford 1962: 168)

The dress did not seem to play any part in hiding Numidi's nakedness but more as a decoration. Mountford explained why he thought Numidi wanted to wear the dress:

> But Numidi did not want that dress to cover up her nakedness. She was unaware that clothes were required for that purpose; in fact, before the aborigines are spoiled by close contact with our civilization they have no self-consciousness about nudity. Still, though their culture gives them little opportunity for personal decoration and consequent self-pride, the aborigines are, after all, human beings and, like ourselves, will use any means to gain social approval. Hence Numidi's desire for the dress. (Mountford 1962: 124-125)

Numidi thought that wearing of the dress gave her a higher status within the group. The question here is: what did the wearing of the dress indicate to others? Did the dress make Numidi important in the eyes of the other Aborigines?

Herbert Basedow (1881-1933) an anthropologist, geologist, explorer and medical practitioner, travelled extensively throughout Central Australia, Arnhem Land and western coast of Northern Territory and Gulf of Carpentaria. Writing about the Aborigines he had met over the years, Basedow (1935: 21) observed 'most of the tribes under normal and unrestrained conditions move about in a state of utter, and apparently unconscious, nudity'. Basedow summed up the Aboriginal value of clothing by the actions of an old Aboriginal man, nicknamed Opera, in the Musgrave Ranges, South Australia. Opera had been given a complete set of clothing:

> …and took great pride in parading before his admiring tribes-people. But when the novelty wore off, Opera disposed of his coat, his shirt and his trousers, for which he received some red ochre, pitjuri leaves and a small stone knife. (Basedow 1935: 25)

As for Numidi, the clothing was only important to Opera while it set him apart from the others, identifying him as a person of some importance within the group. When the moment passed, he changed the function of the clothing as an individual marker within the group to that of exchange goods, which could be traded for more practical items. I suggest here that the function of clothing was more as a form of ornamentation.

In north western Queensland, Roth described the variation in decoration and the introduction of new ideas:

> Each tribe appears to have its own particular designs and decorations so far as the accoutrements and a paraphernalia are concerned…the newly invented corrobboree-song in each district consisting in the main of a new song in an actually old "dress"… of course when it is one that has been imported the accompanying new "dress" is adopted. (Roth 1897 Ch. VIII, Sect. 193)

Roth may have been using 'dress' as a metaphor here but the important thing is that he mentions that groups identified themselves with their own decoration and that they adopted new ideas. Roth's description of dress and new fashions is in contrast to that given by Basedow, who wrote of the limited 'fashion' of dress or ornamentation in Central Australia:

> …the fashion of yesterday remains the fashion of to-day, and is in no need of any sartorial embellishments to make it appear à la mode. A nose-stick, a bandeau, an armlet, a hair belt and a fur tassel usually represents the beginnings as well as the end of their wardrobe. But, strange to say, nobody would dream of sleeping "with his things on" overnight. Before lying down for his rest every member carefully removes what he is wearing, trivial though it might appear, and hangs it on a bush beside him. (Basedow 1935: 24)

Aborigines removed ornaments to sleep in a similar way that Europeans would remove dress. Conversely, the Aborigines could treat clothing items in a similar manner to ornaments. For example, trade or exchange was an integral part of Aboriginal life and played an important role in establishing relationships between different Aboriginal groups or between Aborigines and Europeans. While travelling through the Lake Eyre district, members of Basedow's group gave clothing to the Aborigines and noted the following:

> One would never know for how long a fellow would remain in possession of his clothes. "Swapping" articles is a general practice among the Aborigines, even among members of widely separated tribes who have never met before. (Basedow 1935: 24)

In the late 1700s, Labillardiére (1800: 296), a French botanist, wrote that his group gave garments to young Tasmanian Aboriginal girls but the clothes were hung on a bush and were never seen worn. He wrote of their different reaction to objects that could be ornamental 'little children were very desirous to everything shining, and were not afraid to come up to us, to endeavour to pull off our buttons' (Labillardière 1800: 308).

In 1802, in Tasmania, the French navigator, Baudin, observed an exchange of goods between one of his crew and an Aborigine when attempting to set up a relationship with the Aborigines. After receiving a jacket in exchange for a kangaroo skin, the Aboriginal man removed all the buttons from the jacket then threw the jacket away (Baudin 1974: 305). At another encounter in a different location, boatmen gave their jackets to Aborigines as presents. Later they found the jackets discarded, 'only the buttons, which were of blackened bone and not metal, had disappeared' (Baudin 1974: 345). The buttons were of more value to the Aborigines than the European clothing.

So why did the Aborigines exchange other traditional objects for introduced clothing? Tim Rowse wrote an article about the role of clothing and Aboriginal men working on properties

in western Queensland and Central Australia. I use his Americanised terminology of 'cowboy' in place of the Australian 'ringer' or 'stockman'. He argued 'the significance of cowboy clothes for Aboriginal men may have been that they symbolized men's shared work ethos' (Rowse 2007: 8).

Rowse (2007: 10-11) argued that the cowboy clothes signified that both black and white men could act as equals and a man had to earn the right to wear the cowboy clothes by working as a cowboy. The outfit set the men apart from the others and the status attained by the wearing of those particular clothes could lead to sexual favours with Aboriginal women. In Alice Springs in Central Australia, unemployed men wearing cowboy clothing were seen as imposters. Rowse is pointing out the symbolic content of the cowboy clothing, indicating that the wearer was a member of an exclusive group. In this example, perhaps the clothing can be seen as a substitute for the traditional Aboriginal symbolic indicators of social and individual identity like body scarring and removable ornaments.

Others have recognised the symbolic content of clothing or ornaments. Kenneth Dutton observed 'the body assumes its most metaphorical power when transformed, as through clothing or decoration' (Dutton 1995: 15). Sturma (1998: 92) argued that 'dress and presentation of the body' were valuable symbolic strategies in cross-cultural relationships in Australia and Tahiti but cautions that those strategies had the potential to be misread. Ornaments and clothing were often exchanged in early encounters in Australia and Europeans often took their clothes off as a symbol of common humanity – showing their similarities to the Aborigines and stating their sex. In return, the Aborigines often dressed in European clothing – but usually not for long.

At first encounters, Aborigines were amazed at the clothing and thought it was part of the body. For example, John Hunter in the First Fleet in New South Wales commented that the Aborigines saw their clothing 'as so many different skins, and the hat as a part of the head' (Hunter 1968 [1973]). Often Europeans stripped off their clothes to show their common morphology and as a way of establishing a relationship with Aborigines. In an instance in 1802 in Tasmania, one of the French sailors under Baudin's command was ordered to remove his clothing to show the Aborigines that he was like them - much to the Aborigines' delight (Péron manuscript cited in Dutton 1974: 23, 146).

On that same trip in 1802, Baudin wrote accounts of whites luring Aborigines with glass beads and buttons:

> …of the various objects that we distributed amongst them, glass beads, smallwares etc., the buttons off our clothes appeared to give them most pleasure. (Baudin 1974: 345)

Baudin found that the same importance was placed on buttons by the Aborigines in King George Sound in Western Australia. He noted the crew 'gave them the buttons off their coats, which were greatly prized' (Baudin 1974: 491).

Love spoke of the Worora people from near Port George IV inlet, north-western Western Australia:

> The blacks inevitably see white people, who are clothed. They recognize that the white man has superior equipment, and they will surely copy the white man…At the time of my first acquaintance with the Worora, men walked naked and unashamed, usually with elaborately dressed hair, with a thick belt of spun human hair, from which depended behind a smoothed pearl shell, and perhaps with a necklace, with a pendant behind. The younger women wore a belt, similar to that of the men…little children wore a belt with a little tassle in front, or sometimes a pearl pendant. The old women wore nothing at all, except a coat of red ochre. (Love 1936: 59-60)

Love (1936:59) questioned the role of European clothing in Aboriginal societies and struggled with the appropriateness of imposing the wearing of clothing upon the Worora people in certain conditions. However, Love, too, was affected by his European background because he thought it was appropriate to wear clothes in church meetings but not on hunting expeditions. Love was aware that Aborigines did not need clothing in the natural environment – in fact, clothing was a hindrance. Love has noted that prior to white influence, Aborigines in north western Western Australia were naked except for ornaments, generally pendants.

On the opposite side of the continent, James Morrill was shipwrecked on the north-eastern coast around the Burdekin River area and lived with Aborigines for seventeen years. When Morrill finally came across white people who had set up sheep farming in the area, he was as naked as the Aborigines. Morrill had become used to being unclothed and wrote of the Europeans 'they wanted to give me some clothes, but I told them I had better go back to the natives' (Morrill 1864: 49-50). Morrill had found living with no clothing was suited to the

Aboriginal lifestyle – yet he was brought up to wear clothes. The clothing would have set him apart from the others, identifying him as 'different' to the group.

Between 1882-1883, Carl Lumholtz, a Norwegian explorer and self professed ethnographer, spent time with the Aborigines of the Herbert-Burdekin area of north-eastern Queensland and had a very poor opinion of those people 'upon the whole their civilisation was of a rather low order' (Lumholtz 1908: 72). Lumholtz (1908: 106) wrote 'they never wear clothes either winter or summer, and consequently money has no value'. He did, however, note the importance of decoration when he observed that 'when the blacks are to go to a dance or to *borboby* they decorate themselves as best they can' (Lumholtz 1908: 119). He wrote of the Aborigines in general 'the natives are as fond of decorating their bodies as a sailor, but they do it clumsily with a sharp stone or a clam-shell' (Lumholtz 1908: 149).

Spencer and Gillen mentioned the wearing of ornaments and clothing in Central Australia. 'So far as clothing is concerned, a woman is not much encumbered in her work' (Spencer and Gillen 1899: 27), pointing out that the usual dress for women was one or more fur strings, coated with grease and red ochre and worn around the neck or on the head. For men:

> As regards clothing and ornament, the man is little better off than the woman… If he be at all vain he will have a long nose-bone ornament, with a rat-tail or perhaps a bunch of cockatoo feathers at one end, his *chilara* will be covered with white pipeclay on which a design will be drawn in red ochre, and into either side of his chignon will be fastened a tuft of white or brightly-coloured feathers…His only other article of clothing, if such it can be called, is the small public tassel which, especially if it be covered with white pipeclay, serves rather as an ornament than as covering. (Spencer and Gillen 1899: 30)

Spencer and Gillen added:

> There is very little scope for the display of artistic capacity in the matter of clothing or personal ornaments. Except for waist-bands, forehead-bands, necklets and armlets and a conventional pubic tassle, shell, or in the case of the women, a small apron, the Central Australian native is naked. (Spencer and Gillen 1899: 570)

The fact that the Aborigines wore seemingly non-utilitarian ornaments at all in that harsh environment, means the ornaments had an important function.

These accounts of Aboriginal nakedness and the interaction between Europeans and Aborigines have a common theme. The only dress the Australian Aborigines wore were animal skins, cicatrices and personal ornamentation of which beads were highly desirable.

Bonfante's (1989: 544) gave five reasons for the human use of clothing:

1. protection against the elements;
2. social markers distinguishing class or tribal membership;
3. shame of showing nakedness;
4. aesthetic reasons – including: as decoration; and for attracting the opposite sex; and
5. for apotrapaic reasons – to ward off magic or evil spirits.

From the ethnohistoric accounts above it appears:

1. Australian Aborigines did not seem to need protection against the elements other than animal rugs. Researcher have argued that Aborigines had a higher tolerance for cold than Europeans (Hicks et al. 1931; Scholander et al. 1958).
2. Aborigines used body marking to distinguish class or tribal membership. As for ornaments - closer examination of particular ornaments may give a clearer picture of which ornaments were important and why.
3. Aborigines had no shame of their nakedness prior to European settlement.
4. Aborigines used personal ornaments to make themselves attractive.
5. Once again, a more detailed examination of particular ornaments from the literature may give information regarding the objects that may hold magical powers.
6. Added to that, some Aborigines took their ornaments off at night.

Aborigines did not place any importance on covering their nakedness but they did mark themselves with cicatrices and removable objects. The importance of marking themselves and being marked was central to Aboriginal life. In Chapter 6, I will give ethnohistoric accounts of the types, use and function of Aboriginal beaded ornaments.

2.6 Conclusion

In this chapter, I have emphasised the importance of beads in the argument about the emergence of modern human origins, presented the theoretical approaches for use of style in understanding patterning of material culture; provided theoretical explanations for function of beads and stressed the value of ornaments to Australian Aborigines as a form of dress.

Beads have been recognized as highly symbolic and their distribution in time and space has been the focus of much academic debate. The variability in beads has been a feature that has enabled researchers to determine differences and similarities and to use that patterning to interpret behaviours in the archaeological record. Ethnography has been a useful reference for understanding the function of beads within prehistoric societies in an archaeological context.

The work of Wiessner and Vanhaeren and d'Errico are of particular relevance for this study and I will make my predictions for the spatial patterning of Australian Aboriginal beaded ornaments based on their arguments. I predict that there will be geographic patterning of style in beads, and that patterning will be related to behaviours in response to social more than environmental factors. Patterning will depend on the value of a particular form or raw material and the symbolic importance of the object according to the relationship between the object and its function. In the next chapter, I will place beads in an Australian context by discussing environmental and social influences on the distribution of Aboriginal beads.

CHAPTER 3 BEADS IN THE AUSTRALIAN LANDSCAPE

3.1 Introduction

In the previous chapter, I provided the theoretical models for interpreting geographic patterning of material culture. In this chapter, I will present the background for the study, placing Aboriginal beads in an environmental and behavioural context. I will start with a broad description of the research area, a brief outline of Aboriginal culture at the time of European contact, followed by an evaluation of the idea of culture areas and drainage basins as cultural spatial markers. Further to that, I will consider the importance of beads as exchange objects in Aboriginal society.

3.2 Australian landscape

The research area for this study includes the continent of Australia and the near shore islands. This is a very large area and encompasses a variety of geographic features, climatic conditions and vegetation types. The continent has an area of almost 20,000,000 square kilometres (7,682,300 sq. miles). Mainland surface elevation varies from the highest point of over 2,200 metres above sea level at Mt. Kosciusko in Great Dividing Range in south-eastern Australia to the lowest point of 15 metres below sea-level at Lake Eyre in South Australia (Reader's_Digest 1994: 8). See Figure 3.1.

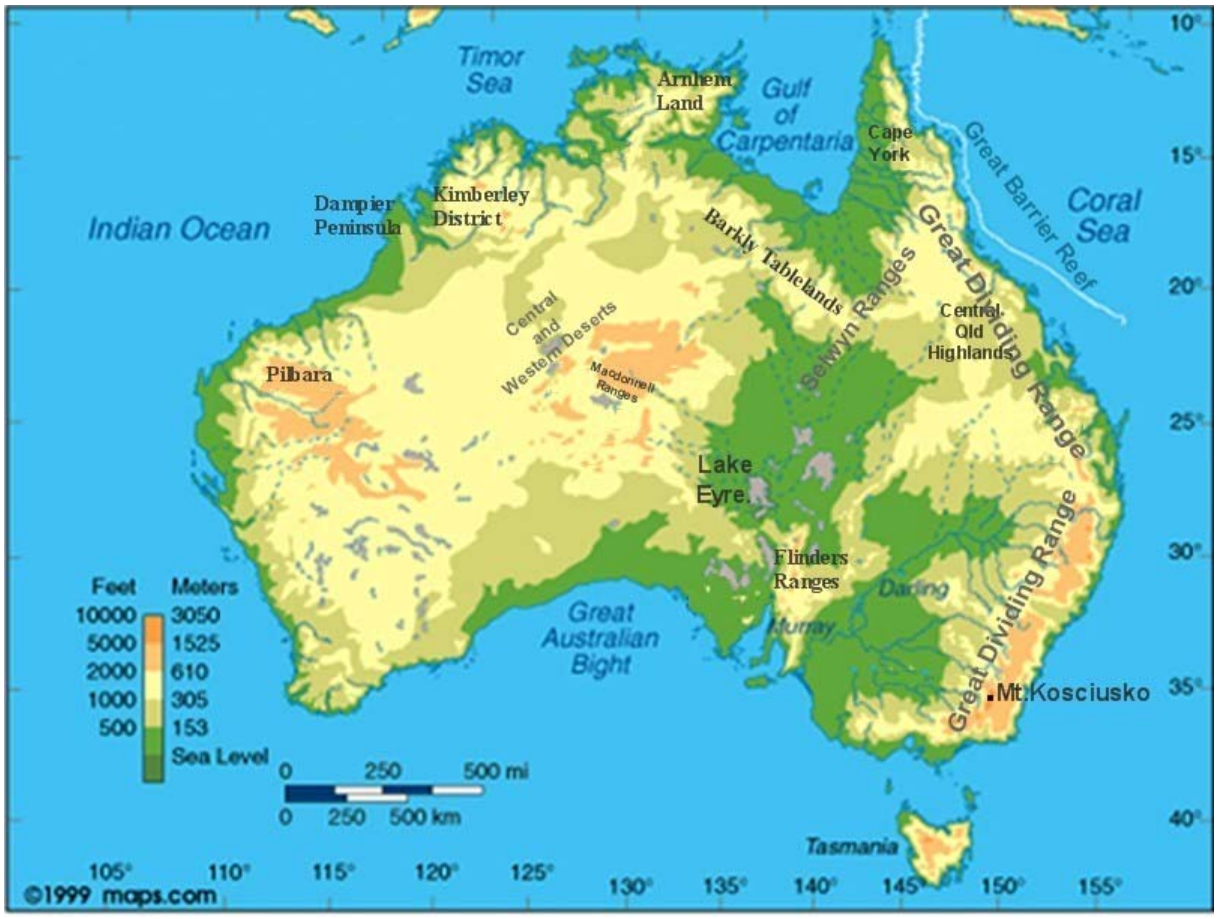

Figure 3.1. Physical elevation map, adapted from *http://www.maps.com* (1999)

The eastern side of Australia is dominated by the Great Dividing Range, which separates the coastland from the drier inland. The Great Dividing Range stretches from the south eastern corner of the mainland to almost the tip of Cape York at the northern end of the continent. The Great Dividing Range is reasonably level on the western side and fringed by an escarpment on the eastern side (Haworth 2006). The Great Dividing Range would have been a formidable barrier for people wanting to cross from the eastern coast to the west but provided no real challenge from the western side, providing waterholes and lagoons in reasonably flat surroundings.

Drainage to the east coast consists of relatively short, fast flowing waterways. To the west of the Great Dividing Range, the northern section drains to the Gulf of Carpentaria and rivers drain to the Gulf of Carpentaria from areas of higher relief to the south and west (e.g. Selwyn Ranges to the south of the Gulf). Further to the south and west of the Great Dividing Range, watercourses drain into slow moving, long, extensive river systems. The most northerly of these drainage systems consists of numerous ephemeral large rivers that meander across lowlands to the enclosed Lake Eyre basin. Many Australian inland watercourses have no

water for prolonged periods. Further south, the Central Queensland Highlands in the Great Dividing Range contains the headwaters of several waterways that join the Darling/Murray River system and eventually flow to the sea at the southern end of Australia. The watercourses provided a network of travel routes across the lower areas and provide access into areas of higher elevation, enabling people to travel across mainland Australia.

Away from the coastline, the central and western areas of Australia are characterised by generally flat, sandy or stony desert areas with several areas of high relief. The continent could be crossed between north to south from the Gulf of Carpentaria to the Great Australian Bight, and from coastal areas of Western Australia via the extensive network of watercourses and water holes that existed prior to European settlement. Evidence of past human presence is found in rock art that is scattered throughout Australia, particularly in areas of high elevation such as the Pilbara District in Western Australia, the Kimberley area in north western Western Australia, Arnhem Land in Northern Territory, Flinders Ranges in South Australia, Macdonnell Ranges in Central Australia, Central Queensland Highlands, Selwyn Ranges and Cape York Peninsula in Queensland. An area so large has a diverse range of climatic and vegetation zones. Figure 3.2 shows the climatic regions in Australia and Figure 3.3 shows the vegetation zones in Australia prior to European settlement.

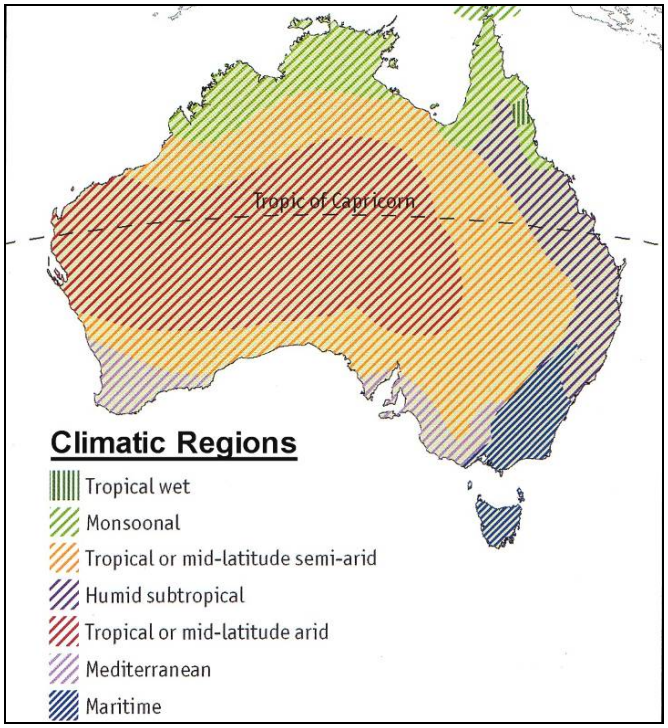

Figure 3.2. Australian climatic regions, adapted from Arthur and Morphy (2005: 26)

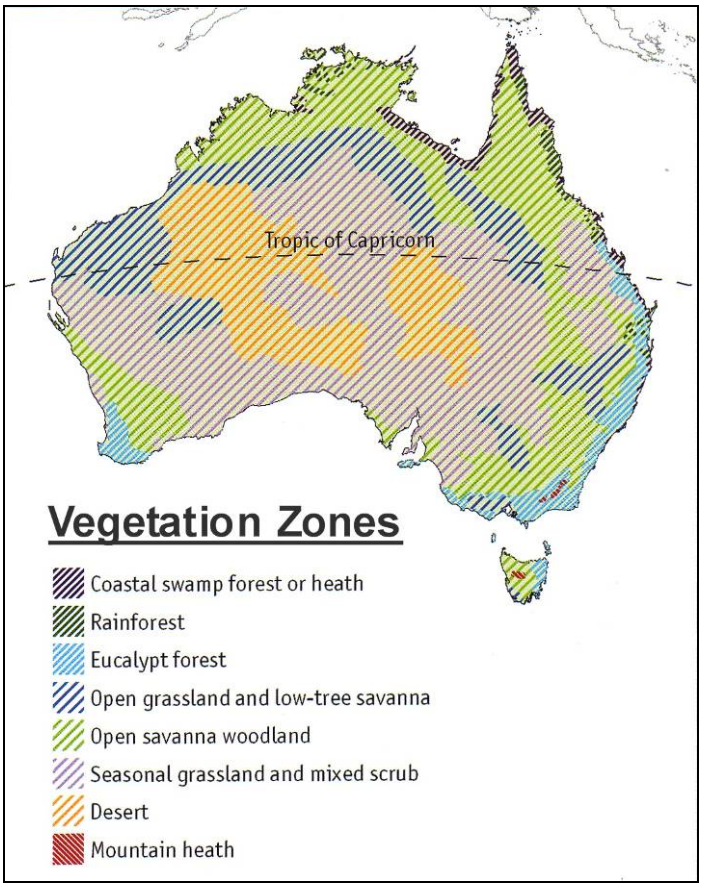

Figure 3.3. Australian vegetation zones prior to European settlement in 1788, adapted from Arthur and Morphy (2005: 29)

The northern or top end of Australia has a tropical wet or monsoonal climate. The vegetation prior to European settlement varied from swamp forest or heath, rainforest, and open savanna woodlands. The east coast has a humid sub-tropical climate while the south-east coast and Tasmania experience a cooler, maritime climate (strongly influenced by oceanic environment). Vegetation in those areas was mainly Eucalypt forest and open savanna woodlands before 1788. West of the Great Dividing Range is drier and hotter than the coast and, at the time of European settlement, was mainly open savanna woodland and low scrub, replaced by grasslands, scrub and desert further to the west. Hot and dry conditions prevail across the central and western areas of Australia, with the vegetation dominated by desert and grassland.

The Australian landscape has changed over time due to extreme climatic changes and subsequent sea level rises and falls. For most of the period between 10,000 and 120,000 years ago, sea levels were lower. During that time, Tasmania was isolated from the mainland from 43,000 to 14,000 years ago with the exception of a few occasions when a tenuous narrow land bridge to the mainland existed (Lambeck and Chappell 2001). There was never a land bridge

connecting the Greater Australian landmass to Asia resulting in different Australian flora and fauna. Even though many food species from Asia existed in Australia (Golson 1971: 209), the first people to arrive in Australia had to adapt to working with many new resources in space and time.

Birdsell has argued that, in an arid country like Australia, rainfall and population density are related and there is a tendency for areas with higher rainfall to have higher densities of population in a smaller tribal area than areas with lower rainfall. Birdsell wrote 'the high degree of correlation between rainfall and density indicates that the Australian Aborigines are subject to a rigorous environmental determinism of their densities' (Birdsell 1953: 206). Davidson (1938a) estimated the spread of population of Aboriginal people in 1788 when European colonisation occurred (Figure 3.4).

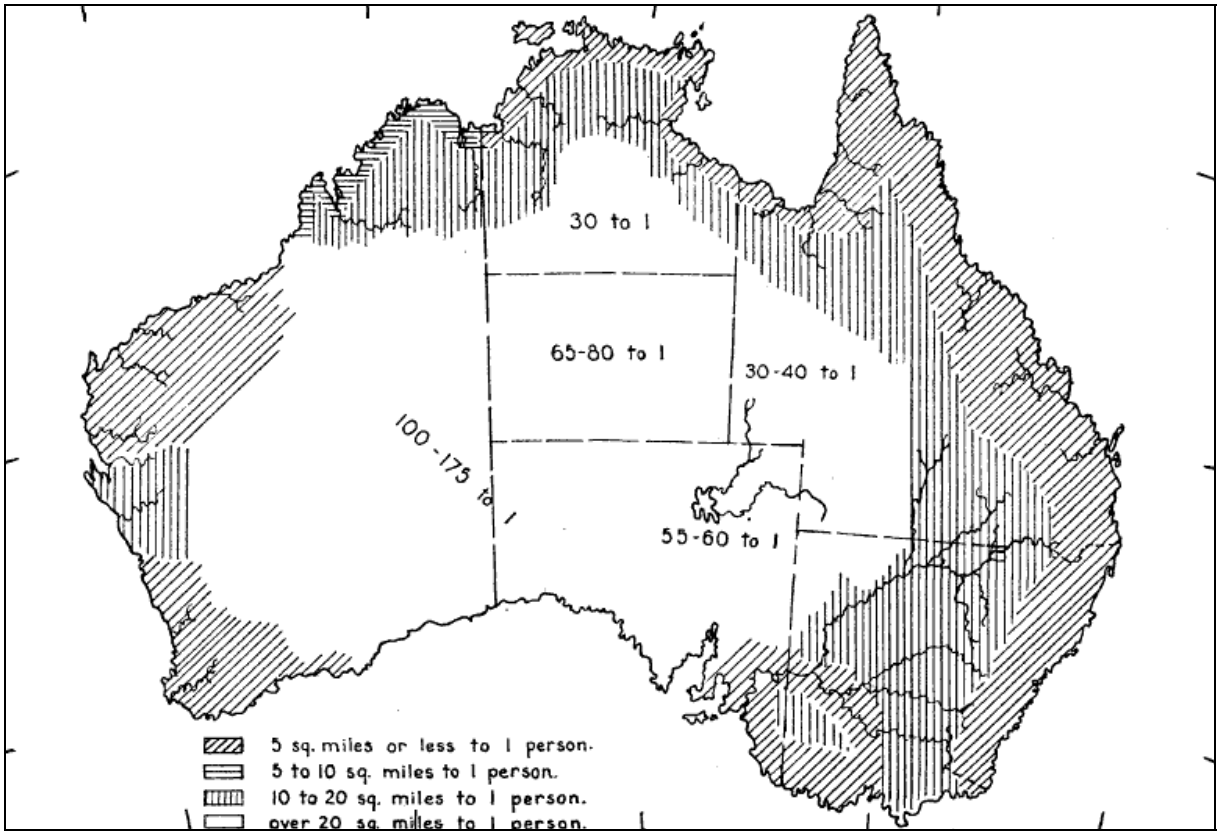

Figure 3.4. Estimated population density of Australian Aborigines in 1788 (Davidson 1938a: 655)

From Davidson's map, the highest density of people occurred around the coastline with areas of less dense populations occurring across the desert areas that extend through Central Australia to the Great Australian Bight in the south. According to Davidson's estimation, there appears to be a degree of correlation between the population density and climatic zones

(as shown in Figure 3.2). Davidson (1938a: 652) estimated population density by calculating the number of 'hordes' (groups) that could exist in an area based on 'ecological conditions'. Davidson gathered his information from published sources at the time.

3.3 Aboriginal people at the time of European contact

When Europeans first settled in Australia, Aborigines were living a nomadic hunter-gatherer lifestyle determined by seasonal cycles. People living in harsher environments had a larger foraging range and moved camp more often than those living in richer environments (Bowdler 1977; Hiatt 1962; Stanner 1965a). Aboriginal cultures varied across the continent and islands and Tindale (1974) estimated there were over 600 cultural or language groups across Australia (Figure 3.5). Tindale mapped his divisions based on primary political units (Knight 2003; 29), which have been considered as 'misleading and inappropriate' (Knight 2003: 41).

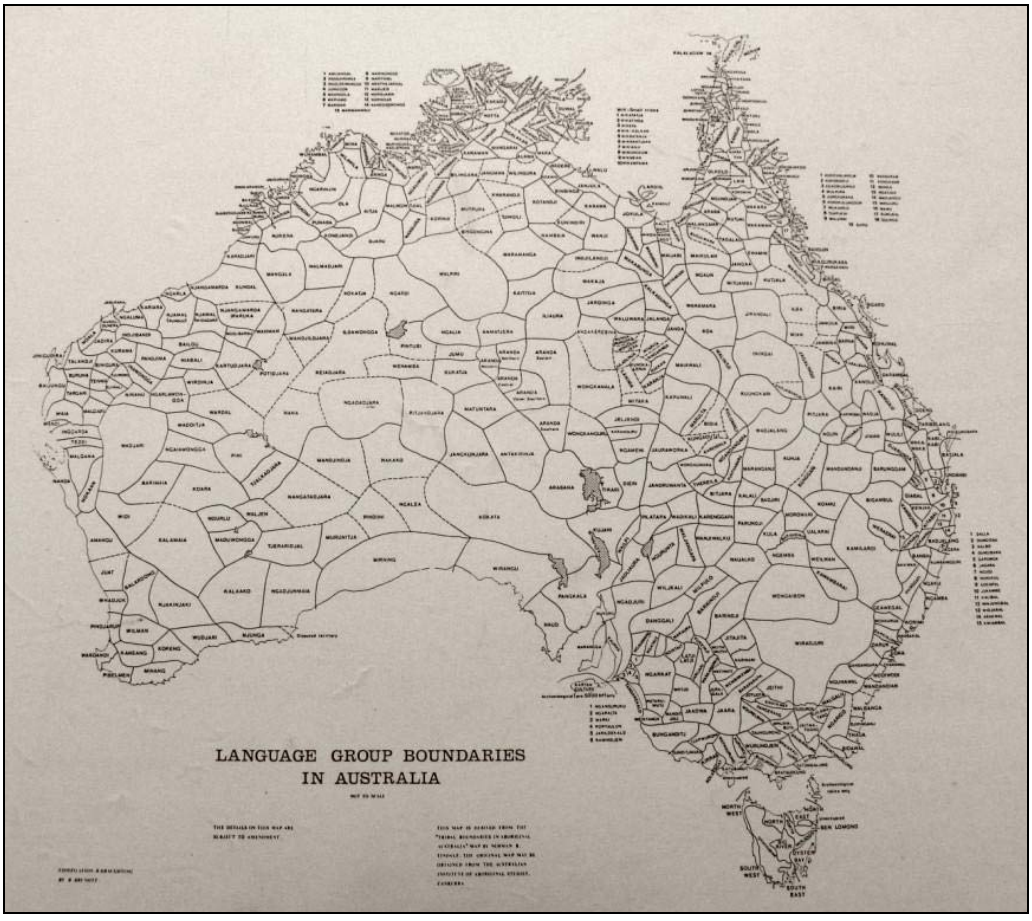

Figure 3.5. Language group boundaries (Tindale 1974)

Tindale was not the only one to define boundaries for cultural groups. Issues of Aboriginal territories and social organisation have been debated in Australia for many decades (Bell

1993; Berndt 1955; 1959; Berndt and Berndt 1968; Birdsell 1953; 1970; Gumbert 1981; Hiatt 1962; Knight 2003; Meggitt 1962; 1974; Peterson 1976; Piddington 1971; Radcliffe-Brown 1918; 1931; 1951; 1956; Stanner 1965b; Verdon and Jorion 1981). Between the 1930s and 1960s, anthropological thinking about Aboriginal society was dominated by the work of A.R. Radcliffe-Brown. The argument has focused on terminology (and the meanings of those terms) for defining group size such as 'clan', 'band' and 'horde', boundaries and allocating matrilineal and patrilineal descent to groups.

The lifestyle and material culture of Aboriginal people varied enormously. They 'owned' very little material culture as McCarthy pointed out:

> …the simplicity of the material culture of the Australian Aborigines has often been contrasted with their complex social organisation and totemism, and with the intensity and richness of their religious life. (McCarthy 1940: 241)

The Aboriginal way of life was not static and ideas and goods were constantly being exchanged, which was an important aspect of Aboriginal life. As hunter-gatherers, people would have had to carry everything with them or cached goods. In a harsh environment, it raises the question of why people would carry ornaments. For example, in the Central Desert, people had to cope with extremely hot and dry conditions that made water and food scarce at times. Spencer and Gillen (1899: 30) reported that the Aborigines of the Central Desert carried their personal belongings with them 'on their wanderings'. One of the strategies for survival in a harsh environment was the extensive network of trade routes where goods and ideas flowed, not only for economical purposes, but to maintain social networks. Water and waterways were important features for travel.

Ethnographic accounts relate the differences in Aboriginal cultures across Australia, both within a region and between regions. In Cape York, Thomson (1933) noted the people from different groups on the East Coast had a more uniform culture than those of the West Coast. The East coast people were less nomadic and exploited the coastal environment (Hale and Tindale 1934; 1933; Thomson 1952). For example, people on the west coast were less dependent on fish (Thomson 1939: 211) and there were cultural differences (e.g. economy, ceremonies, totems and cults) between the Wik people and groups to the north (McConnel 1930: 4; Thomson 1933). McConnel (1936; 1945) described differences in phonetics, totemic

culture, ceremonies and social organisation between groups north of the Archer River and groups south of the Archer River.

Spencer and Gillen (1899: 151) noted the differences between Central Australian groups and other groups. They observed that aspects of culture and material culture in one area could have different scales of significance in other regions. For example, similar materials were used in initiation ceremonies and as love charms in Central Australia and north-western Queensland. However, in north-western Queensland the authors remarked 'there does not appear to be the significance attached to them in the tribes studied by Mr. Roth that there is in the Central tribes' (Spencer and Gillen 1899: 152).

In relation to styles of decoration, Spencer and Gillen defined three major groups: 1) East coast and South-east tribes; 2) Central tribes; and 3) Western tribes. Spencer and Gillen argued that the groups developed independently and attributed the geographic features as a factor for the differences: 'the physical conditions of the continent have also been such as to shut off for probably long ages the Central tribes' (Spencer and Gillen 1899: 151-152). Spencer and Gillen were too simplistic in separating variation in styles into three groups. The reality is much more complex and I will discuss this later in this section.

There is a common theme in associating Aboriginal cultures with geographic features and the use of spatial patterning in material culture to define cultural areas.

3.4 Culture areas

The concept of culture area was devised in the late 19th Century in North America as a method of organising ethnographic collections in museums. In 1887, Franz Boaz, an ethnologist, was the first to suggest that cultural material should be displayed according to geographical areas instead of the typological or evolutionary sequence classifications that were used at the time. Around that time, researchers were starting to look at studies of whole cultures instead of individual objects or classes of objects. Shortly after, Otis Mason and, later, Clark Wissler followed his approach and published distribution maps of ethnographic material according to geographic units (Trigger 1989: 122). Wissler looked at traits and their diffusion from cultural centres. For this work, I adopt Peterson's (1976: 51) definition of

culture as 'culture is a way of referring to the prevailing techniques by which a human population maintains itself in its habitat'.

The concept of culture area was developed by Alfred Kroeber, an American anthropologist. Kroeber directed pupils and colleagues in the documentation of material and social culture of North American Indian tribes. Thousands of artefacts and traits were recorded over the period 1930 to 1940, providing an enormous data base from which patterning of variation in material culture could be analysed.

Kroeber (1939) noted the presence or absence of individual traits between different assemblages and found that there were some significant correlations between cultural patterning and environmental areas (in particular, vegetation zones). He identified ten culture areas amongst the North American Indian tribes. Kroeber thought that drainage areas could also be considered 'briefly' as analytical units for defining cultural groups. He wrote:

> In one respect drainage is often a good indicator of tribal boundaries. Except where streams are very large and the country of relatively uniform height, watersheds and not rivers tend to form native ethnic or political frontiers…culture boundaries not infrequently follow watersheds. (Kroeber 1939: 216-217)

Nonetheless, Kroeber thought that the role of drainage basins was limited for organising cultural zones as only exceptionally high mountains would act as natural barriers. Kroeber argued the surrounding terrain (river, swamps, slopes etc.) was more important than the drainage basin for determining cultural boundaries.

Kroeber was never associated with the study of Australian culture areas (Peterson 1976: 55). However, he did have some influence on Australian writers. Cultural geography had already been applied in Australian studies - Davidson (an American) argued for culture areas in Australia and the spread of culture through diffusion:

> …the Australians, it would seem, should constitute an example par excellence for a culture study based upon the Geographical Distribution theory**.** In addition to their simplicity in culture, they occupy an entire continent and serve to illustrate the only case where one people having one general culture occupy such an enormous region. Furthermore, the Australians, having a whole continental island on which to develop their culture, and not being navigators in the ordinary sense of the word, and by their geographical location being far removed from the paths of the great culture movements which have influenced the World, it would seem they should exhibit a very minimum of foreign culture influence. (Davidson 1928: 28)

Davidson went on to say that the Great Dividing Range had 'important effects upon the diffusion of certain traits and have served to retard the movement of culture into the coastal regions' and that many traits spread out from the centre (Davidson 1928: 28).

From his study of Aboriginal decorative art, Davidson wrote:

> Of the designs employed many are of local distribution. Others are found in non-contiguous appearance scattered over the continent. Some information is available to indicate the recent diffusion of certain designs into new regions to replace older designs. Thus it seems apparent that although the psychological incentives to decorate remain more or less constant, the expression in designs and technique varies according to historical influences. (Davidson 1937: xiii)

McCarthy (1940) studied the origin and distribution of particular traits of Aboriginal material culture to define eleven tentative areas that had a suite of traits that distinguished regional differences or similarities. Figure 3.6 illustrates his tentative boundaries. The arrows on the map indicate possible entry points of external influences.

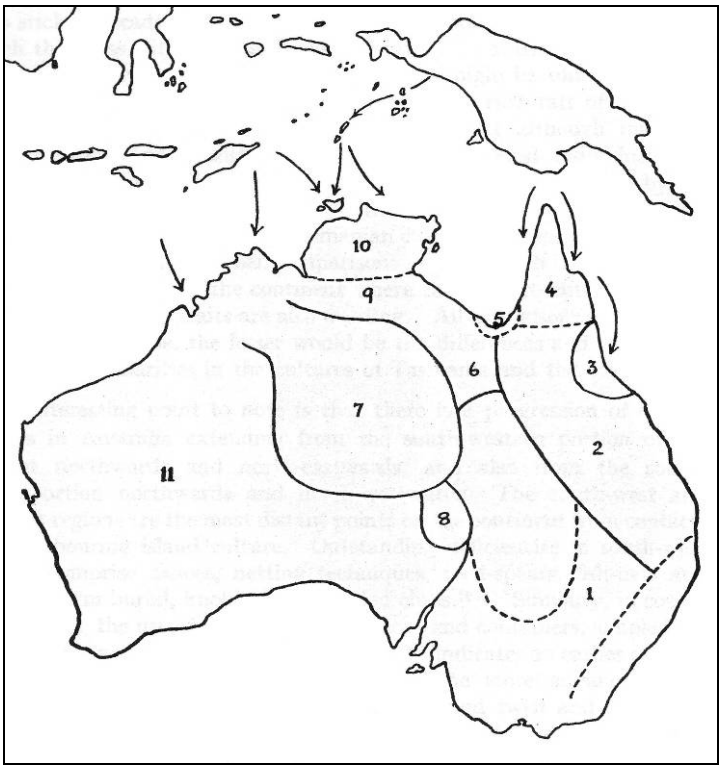

Figure 3.6. Areas of local variation from McCarthy (1940: Fig. 4, p. 259)

McCarthy's traits included art design, weapons, implements, utensils and ornaments. Factors influencing the distribution of traits included:

1) 'The influence of material' (McCarthy 1940: 244-246).

2) 'Limitation of the manufacture of a trait to one locality or group of tribes even through the raw materials are available in localities to which it is traded' (McCarthy 1940: 246-247).

3) 'Local elaboration of a widespread trait' (McCarthy 1940: 247-248).

4) 'Invention of a distinct type of object or a change in design or form' (**McCarthy** 1940: 248). Variation can be the result of the work of individual workmanship within a group.

5) 'Substitution' (McCarthy 1940: 248-249). Products may be modified locally for a wider range of uses.

6) 'Diffusion and trade' (McCarthy 1940: 249-250). Traits spread throughout networks, at times introducing new techniques and replacing old ones.

McCarthy wrote of the variation in ornaments:

> …ornaments form an interesting example of the influence of local materials. In the coastal area shells, fish spines and vertebrae are most commonly used, and in the interior feathers, twine, animal teeth and fur. The form of many ornaments is due to cultural inheritance and introduced ideas. (McCarthy 1940: 246)

If this is so, I should find those materials distributed as McCarthy has predicted but the form of objects may change locally. McCarthy made a comparison between Victoria and Queensland material culture.

> …a number of introduced traits in Queensland which are lacking in Victoria…the material culture of eastern Australia does not allow a simple division into culture areas…it is possible, however, to define a number of areas of local variation. (McCarthy 1935: 264-265)

Rather than defining regions as 'culture areas', McCarthy (1940: 250) considered Australia to have a 'single-culture complex'.

In 1968, Tindale began work on defining culture areas in Australia. Tindale classified seventeen major groups but thought it was difficult to identify differences in smaller groups. He wrote: 'Whatever type of framework we might seek, there is not sufficient data to differentiate material culture trait blocks on a tribal basis'(Tindale 1968: 623).

Ethnographers have documented the impact of geographic features on cultural groups. Thomson observed that the Great Dividing Range in East Cape York was a barrier to the spread of culture between the 'inlanders' and 'coastal' people:

> …the little group of tribes constituting the Mälnkänidji occupies a narrow strip of country on the sea coast lying to the eastward under the range of mountains that runs parallel with the coast line for almost the entire length of the Peninsula. This mountain range appears to have acted to some extent as a natural barrier, shutting off the Mälnkänidji from any considerable contact with the inland natives. (Thomson 1934a: 237-238)

The material culture of the sea-faring coastal people differed in many aspects to that of the inlanders. For example, the coastal people had dug-out canoes for hunting marine animals and among items exchanged between coastal groups were baler shells and 'the greatly prized mother-of-pearl pendants'. Thomson believed that the economic exchanges between coastal groups was motivated by 'mutual fear' of raids between tribes (Thomson 1934a: 240).

Ursula McConnel (1953: 2) also wrote of natural barriers in Cape York. She felt that the area around the Archer, Kendall and Holyrod Rivers, West Cape York, was the only undisturbed area in Queensland at the time. The crocodile infested Archer River protected the area from the north and the Great Dividing Range to the east. As noted in the previous section, McConnel (1936: 455) observed there was a linguistic boundary at the Archer River and that there were 'marked differences' in the kinship systems north and south of the Archer River. This may be reflected in the material culture. The Great Dividing Range does not extend much further north than the Archer River and McConnel (1945: 535) later noted that 'north of the Archer River there is a linguistic and cultural change which extends right across the Peninsular, as far as Cape York'. In fact, the headwaters of the Archer River extend to within twenty kilometres of the east coast of Cape York, coursing between lower elevation breaks within the Great Dividing Range. If people were using the river systems as travel routes, then the Great Dividing Range would have provided no significant barrier at this point. To the south, the range rises more steeply and is more strongly defined as the watershed between two major drainage basins.

3.5 Drainage basins

Nicholas Peterson (1976: 51) claimed there had not been any 'substantial' effort to classify culture areas in Australia and that Kroeber's analysis for the Americas had not provided an analytical framework for understanding the interaction between culture and nature. Peterson's first presented his paper about drainage basins in a symposium held to honour Norman Tindale and Joseph Birdsell. Tindale was known for his work on tribal/language boundaries and Birdsell for his ecological approach to studying hunter-gatherers. Birdsell was a student of Tindale. Both Tindale and Peterson had been to the United States of America and had been exposed to the work of Kroeber. Peterson held the ecological viewpoint that culture can be referred to as a population's response to the environment and wrote 'I believe natural factors to be important in the understanding of culture and nowhere more strongly than in societies based on hunting and gathering' (Peterson 1976: 51). He added:

> Clearly then, ranges, swamps, rainforest, waterless stretches and rivers can act as barriers… it might be expected that the geographical area uniting such features, the drainage basin, would be an important determinant of regional groupings. (Peterson 1976: 61)

Previous Australian ecological studies had been undertaken. For example, Birdsell (1953) attempted to define a predictive relationship between rainfall and demographics; Meggitt (1962) studied the relationship between desert people and different vegetation types; and Stanner (1965a) examined at both rainfall and types of vegetation. Peterson thought these ecological studies had a common theme - the importance of water - and he highlighted the role of drainage basins in determining culture areas of Aboriginal Australia, as watersheds act as natural barriers for communication.

Peterson proposed seventeen tentative drainage basins for Australia (Figure 3.7). He had nominated the same number of culture areas as Tindale.

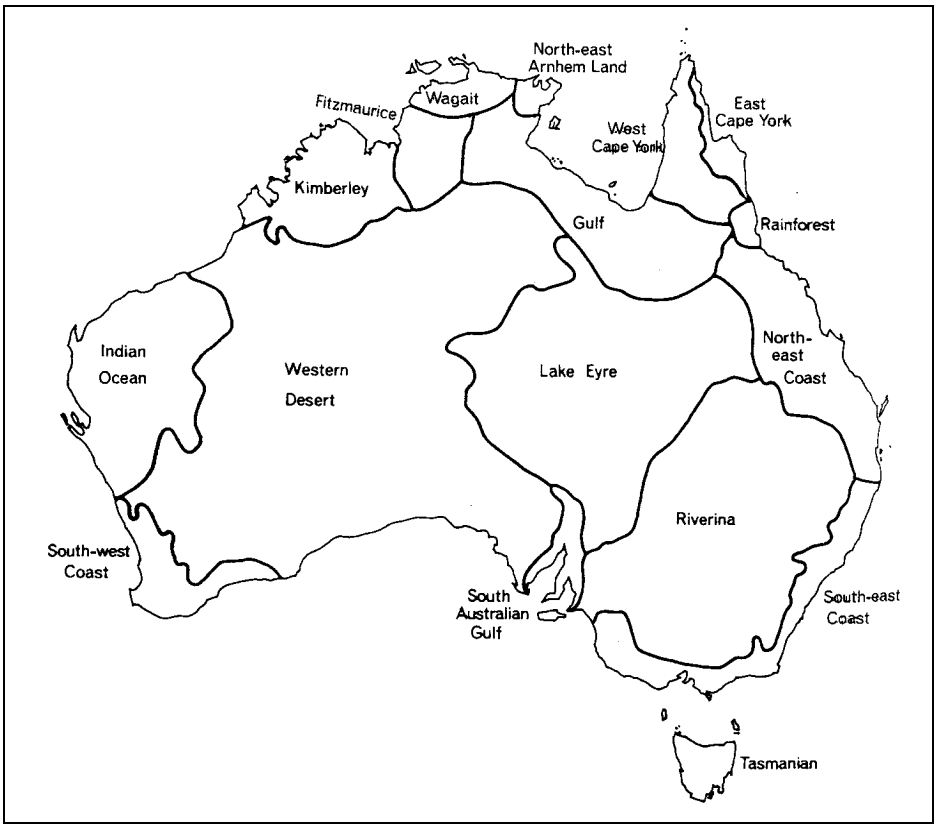

Figure 3.7. Major drainage basins from Peterson (1976: 66)

Peterson's drainage divisions differ slightly from those defined by the Office of Spatial Data Management, Geoscience Australia (Figure 3.8), which is the base map I will use for my analysis.

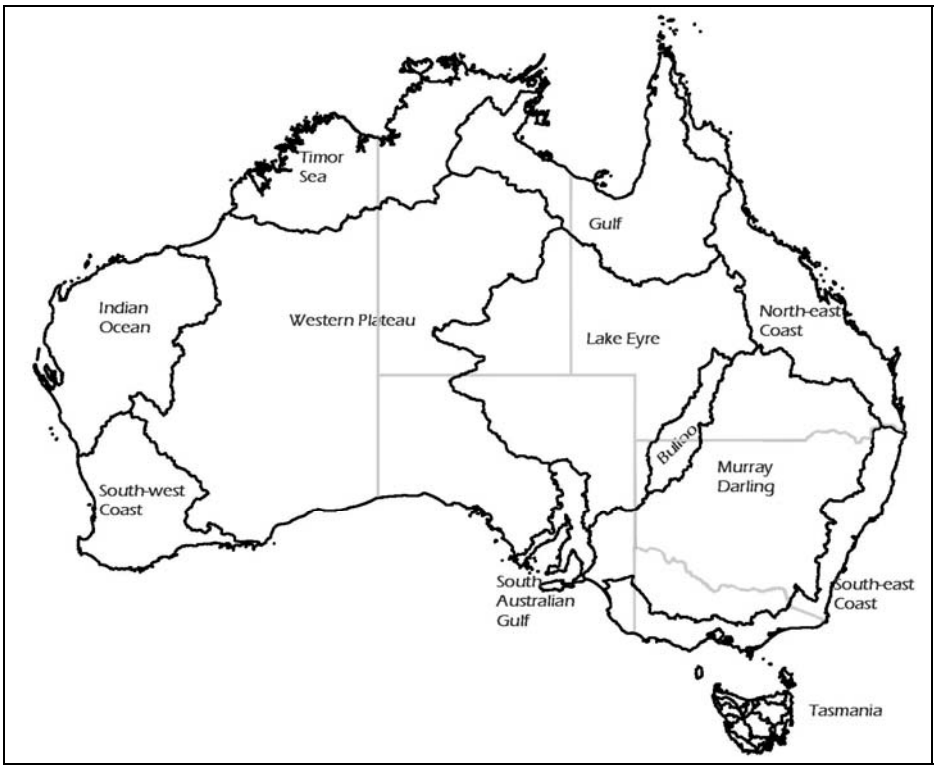

Figure 3.8. Australia's River Basins (2004), Geoscience Australia, *http://www.ga.gov.au*.

The idea that drainage basins could be useful as a framework for studying human geography was not new. As early as the mid 18th Century, French cartographers thought drainage basins defined political units because river networks unified a region and watersheds were natural boundaries (Peterson 1976; Smith 1969). In Australia, drainage basins had been associated with language divisions. Strehlow wrote:

> Topographic features such as mountains or rivers often provide convenient boundaries between populations divided by language differences. (Strehlow 1970: 92)

It was Peterson (1976) who really advocated the merit of drainage basins as an analytical tool. Denham (1978: 975), in his review of that article, saw problems with the application of Peterson's approach because of 'the vast expanses of Australia that are not parts of distinct drainage basins'.

Later in 1976, White and Parsons published an article in *Nature* where they had tested human genetic differentiation in Arnhem Land. A number of traits were analysed such as fingerprints, colour blindness and taste. The analytical units were dialect groups, ceremonial/war groups, marriage clusters and drainage divisions. They found there was a correlation between endogamous units and drainage basins. They wrote 'at both the "tribal"

and regional level these endogamous units seem to be closely related to the drainage basin' (White and Parsons 1976: 224).

White and O'Connell (1982: 101-103) considered Peterson's cultural areas as 'bravely suggested' and that correlated boundaries between cultural and environmental distribution in Australia had 'not yet been demonstrated'.

By the early 1980s, archaeological thought had shifted away from environmental explanations for spatial patterning and terms like 'culture area' and, along with diffusionist approaches of writers like Davidson (1928; 1937), McCarthy (1956; 1957) and Tindale (1968; 1974), were not popular. Ideas had been fueled by the ecological model and the reaction of New Archaeology to culture-historical approaches. This changed the approach from description of change to explanation of it through examining the processes of change, and the use of ethnoarchaeology as a means of developing Middle Range arguments for interpretation of archaeological materials (Binford 1978; 1979; Davidson 2006). I do not advocate a return to the concept of culture areas, but perhaps a systematic study of spatial variation in one category of material culture could indicate if there is a basis for further studies of spatial variation in other material culture.

In spite of the critique of White and O'Connell, Sutton (1990) used Peterson's culture areas as a base for examining the cultural and environmental relationships between Aboriginal groups from different economic situations. Sutton presented a model where he speculated that demographic, social and ideological behaviours flow in one direction – from worse to better environments. According to Sutton's concept, it would be expected that there should be some evidence of the flow of material culture across the landscape supporting this model. If this is true, then there might be more connection across culture area boundaries for some categories of ornamentation.

Huchet (1993) looked at Aboriginal art regions. He studied body decoration, identifying twelve separate art regions in Australia. He found that his regions were closely associated with the regions defined by Peterson's drainage basins.

Pickering (1994) also thought that Peterson's drainage basins were useful for structuring social landscapes. He wrote that Peterson had 'demonstrated the general correlation between broad drainage divisions and Aboriginal "culture areas"' (Pickering 1994: 151). In reality, Peterson did not *demonstrate* culture areas – he just offered a theory that could be tested. From his own experiences, Pickering had found that often drainage basins were associated with social landscapes. Pickering studied the Garawa Aboriginal group from the Nicholson River in the Gulf of Carpentaria as a case study to test his theory. He found that, on a macro-scale, the environment structured the distribution of social landscapes. Pickering's analysis involved a minor drainage basin inside the Gulf of Carpentaria drainage basin – not one of Peterson's major basins.

Perhaps Horton's (1994; 1996) *Encyclopaedia of Aboriginal Australia* and the companion map was the most influential use of Peterson's defined drainage basins (Figure 3.9). Horton has based the divisions on linguistic and natural features. The map generally follows drainage basins with some amendments. Dr. Nick Reid (2001 pers. comm.), Lecturer, Linguistics Department, University of New England has commented that this was a very 'odd' classification. There are many examples of languages that have similarities with other languages in other drainage basins and these are not grouped in drainage basins with less closely related languages. However, Horton's division may prove to be a useful spatial tool for identifying patterning in material culture from both a linguistic and environmental point of view.

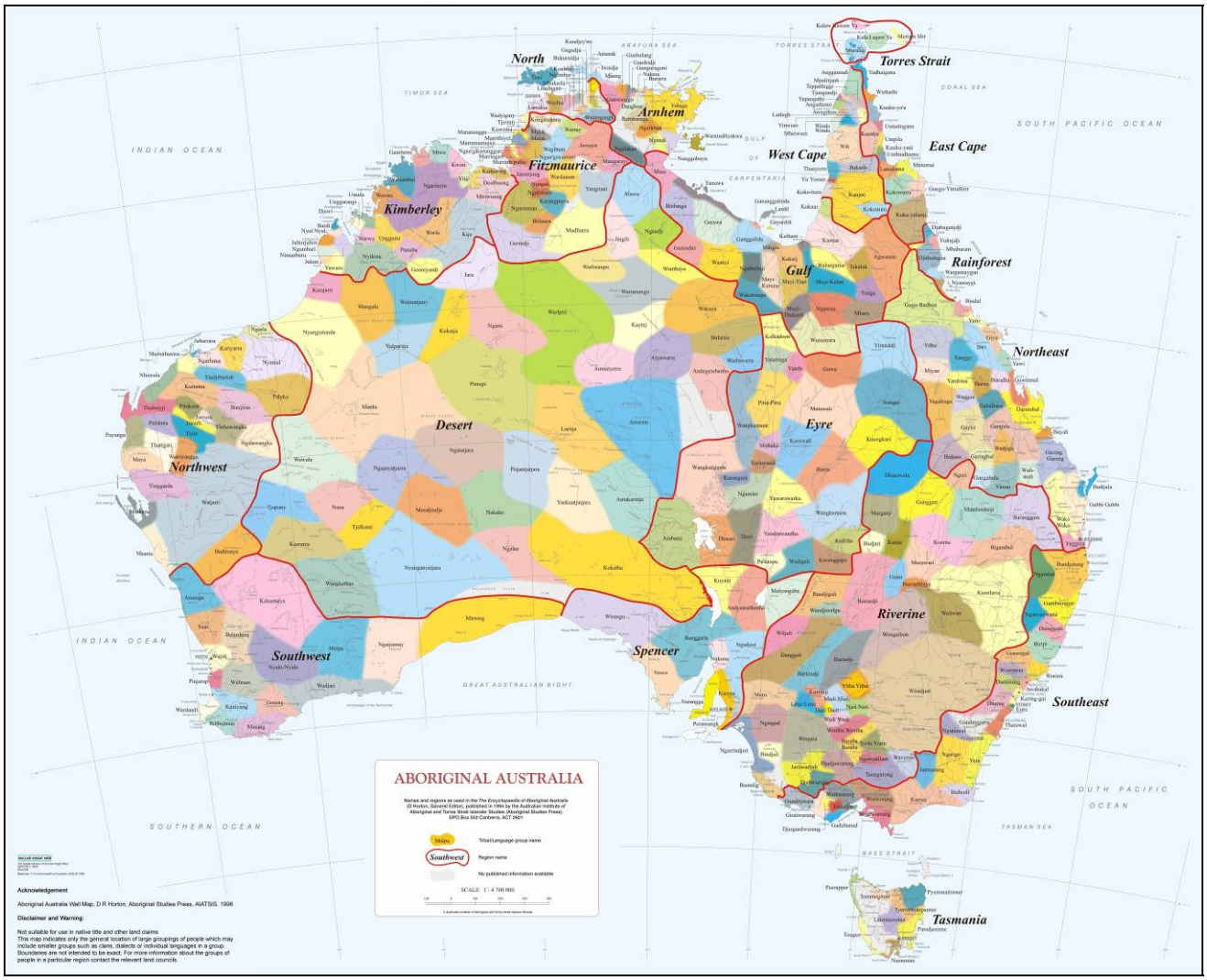

Figure 3.9. Language areas and drainage divisions from Horton (1994, 1996)

In their publication, *The Oxford Companion to Aboriginal Art and Culture,* Kleinert and Neale placed Horton's map inside the front cover of their book with the accompanying remarks:

> The regions were analysed by using the watershed basins as a template and then superimposing all the groups on that base and determining where such factors as culture, language and trade indicated the relationships between groups to be. (Kleinert and Neale 2000)

The point here is that the authors had made the assumption that watershed basins were useful as an analytical tool. At the time, using the drainage basins to group cultural traits was an untested theory.

In 1999, Anne Best used Peterson's drainage basins as analytical spatial units for her PhD. thesis on regional study of Aboriginal ethnographic material from Queensland. Eight hundred

and thirteen objects from six categories were analysed. None of these were personal ornaments. Best produced a model for identifying regional cultural units by examining ethnographic material from Queensland. She wrote:

> It has been established that regional differences in the artefact assemblages incorporating six possible categories of objects are significant and that the presence of six culture areas in Queensland is apparent. The regional blocks broadly correspond to drainage basins. (Best 1999: 303)

In reality, Best (1999: 328) had nominated drainage basins as spatial blocks before she started her analysis, and then carried out her analysis according to those blocks. Best found that 'the distribution patterns of different classes of objects are not necessarily uniform'.

Since then, students from the University of New England have tested the usefulness of Peterson's drainage basins as an analytical tool to investigate spatial patterning of style – particularly my own study on boomerangs (McAdam 2001) and Brady's (2005) on body scarification.

I found that the drainage basin could be a useful analytical tool for looking at the spatial patterning in styles of boomerangs in the region from the Gulf of Carpentaria to Lake Eyre. The patterning of distribution was not uniform for all styles of boomerangs. Some styles of boomerangs showed significant patterning within and between drainage basins but the patterning was more significant between major drainage basins. Also, the patterning of some styles of boomerangs did not always coincide with watersheds. The highest degree of variation between boomerangs was along the major trunk trade route that connected the Gulf and Lake Eyre, particularly in the vicinity of Boulia. Boulia was an important trade centre and close to the area known to produce the most highly sought after drug plant *pituri* in Australia (Watson 1983).

Brady's findings were similar to mine in that the major drainage basins played a significant role in defining cultural areas. He found greater numbers of differences in styles of body scarification between major drainage areas. My study was on a category of material culture that could be classed as a tool and could be traded while Brady's study on styles of scarifications dealt with a trait that was permanent and not portable, serving the function of marking the individual.

From these studies, I sought to find if the same patterning occurred in seemingly non-functional objects like personal ornaments, using drainage divisions as spatial units. For this study, I will also place objects within Horton's spatial units as well as localised collection points to investigate the best fit for patterning of beads. It appeared, from my study, trade was an important factor in the patterning of boomerangs but only for some styles. The location with the greatest diversity of styles was around the trading centre of Boulia. This raised the question - did trade affect the patterning of ornaments in the same way?

3.6 Trade or exchange

Stanner summed up the importance of exchange and the movement of goods for Aboriginal people:

> There can be nothing more useless in the native economy than a pile of foreign spears or axe-heads or dillybags, with no where to send them. (Stanner 1933: 170)

The subject of trade or exchange has been well documented and reviewed for Australia (Akerman 1973b; Akerman and Stanton 1994; Davidson et al. 2005; Hale and Tindale 1934; Hamlyn-Harris 1915; 1918; McBryde 1978; 1984; 1987; McCarthy 1935; 1939; 1940; Micha 1970; Mountford 1951; 1976; Mountford and Harvey 1938; Mulvaney 1976; Roth 1897; 1910a; Tindale 1974). Trade or exchange networks crossed the continent from north to south, east to west and all points in-between. McCarthy described the use of trunk routes for the movement of goods:

> The major trunk routes appear to have operated from north to south, but others existed from west to east, and vice versa. The constant demand for the objects and other things by the groups along the routes, and at the receiving end of them promoted specialised production of the artifacts and traits featuring in the trade and exchange. (McCarthy 1965b: 94)

Standardised production of material culture occurred along the trunk routes. Figure 3.10 shows the major trunk trade routes proposed by McCarthy and the external influences from Papua New Guinea and Indonesia.

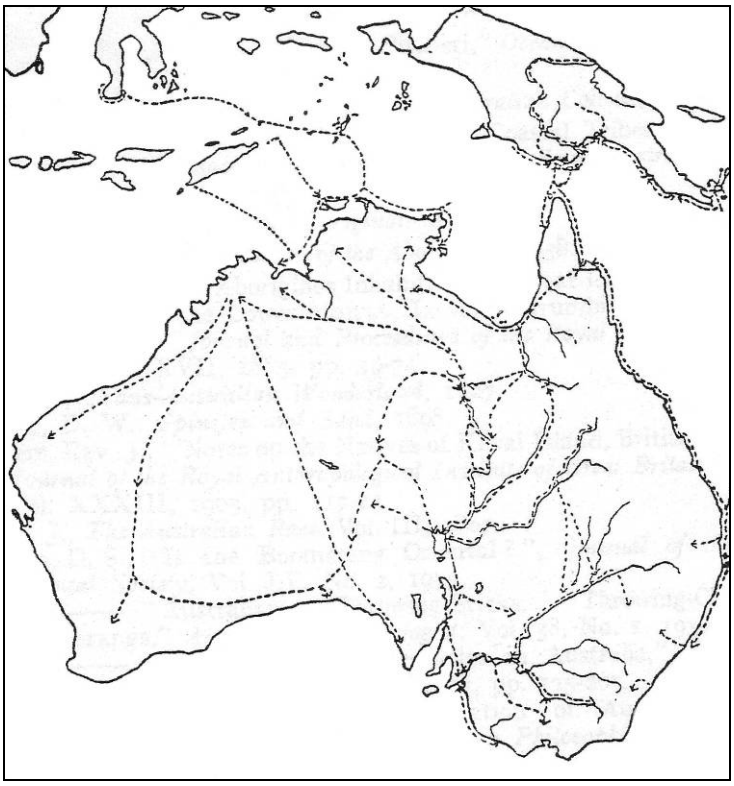

Figure 3.10. Australian Aboriginal trunk trade routes from McCarthy (1939: 191)

It is generally accepted that the main purpose of trade was not so much for economic reasons, but for social, ritual and political purposes. McCarthy wrote on the influence of trade on ideas and material culture:

> Trade was an important factor to be considered in the cause of variation. Motives actuating the desire to trade amongst the Aborigines may be outlined as follows: (1) It was a means of securing desired objects or raw material which were not or could not be made. (2) It was a means of disposing of surplus objects made, and of raw materials. (3) Desire to retain friendships and to maintain intercourse with a trading group. (4) Necessity of maintaining kinship relationships due to inter-marriage between persons of different groups or tribes. (McCarthy 1935: 265)

Mulvaney argued, in the main, the motive for Australian Aboriginal exchange/trade:

> …the occasion or token was more significant than the gift or the donor: social bonding predominated over personal status or economic gain. (Mulvaney 1976: 75)

This conclusion has been reinforced in north-western Queensland by Davidson and others (Davidson et al. 2005), who demonstrated that ochres translocated from outside the region were used for paints as well as ochres from within the region.

Mulvaney pointed out the importance between short distance exchange and long distance exchange. Also, exchange systems had two aspects: primary contact that involved face to face meetings between groups; and secondary contact or indirect influence where goods or ideas moved along traditional routes, passed from group to group (Mulvaney 1976: 77). Mulvaney wrote of the extensive movement of goods across Australia:

> In theory, it was possible for a man who had brought pituri from the Mulligan River and ochre from Parachilna to own a Cloncurry axe, a Boulia boomerang and wear shell pendants from Carpentaria and Kimberley. (Mulvaney 1976: 80)

Hunter-gatherers living in resource poor areas, such as Lake Eyre or the Central Desert, needed cooperation with other groups to reduce risk. Gamble (1982: 322; 1986) investigated the role of style in maintaining networks in the Upper Palaeolithic, using Strehlow's (1970) study from Central Australia as a mode to demonstrate the importance of open and closed social networks. Gamble argued for homogeneity of style in resource poor areas where open social systems operate, and heterogeneity in style for closed systems in richer environments.

Part of the strategy for maintaining alliances was through trade or exchange networks. Figure 3.11 shows a more detailed view of the trade routes from the Gulf of Carpentaria to Lake Eyre according to McCarthy (1939: 424). Closer views of the south east trade routes, Cape York, and Cape York and Papua are in Appendix 1. Goods exchanged represented the whole range of material culture from the different groups in this area, as well as wives and ceremonies. The main exchange items were ochre, stone tools, pituri, string bags, wooden implements and shells (whole or in the form of ornaments).

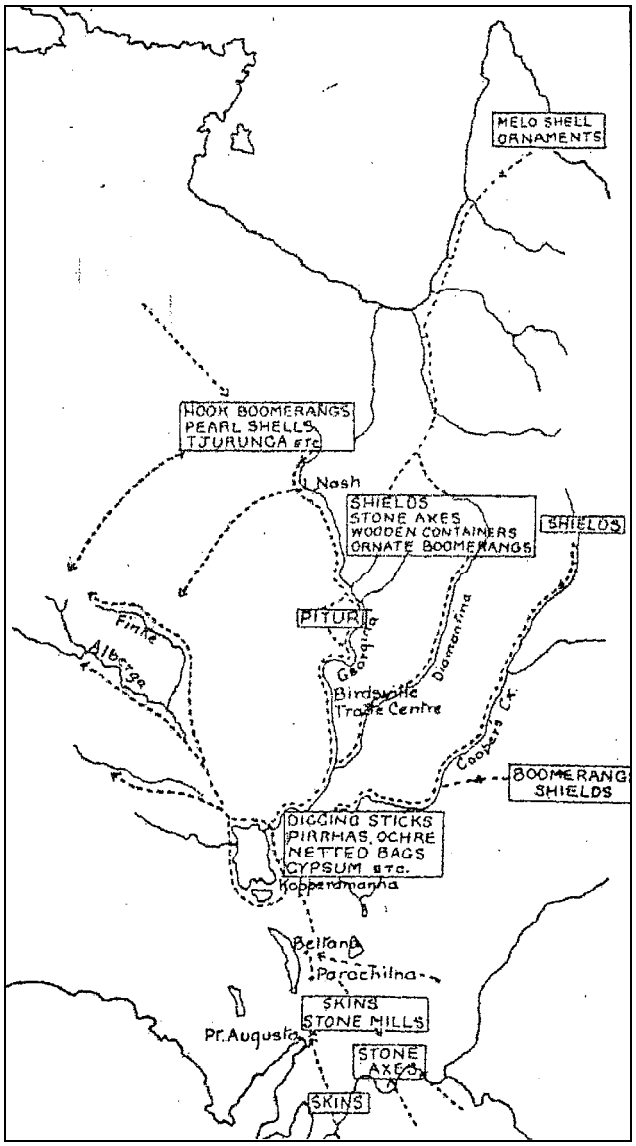

Figure 3.11. Exchange networks between the Gulf of Carpentaria and Lake Eyre from McCarthy (1939: 424)

In an arid country like Australia, it makes sense that exchange routes would follow river courses and major exchange centres located along waterways. Walter Roth, the ethnographer, noted in north-western Queensland:

> In the Boulia District, it would appear that the trading season commenced with the full maturity of the Pituri plant, the local narcotic…while at Brisbane (*T. Petrie*) it was when the Bunya nuts were ripe. (Roth 1910a Bulletin 14, (II): 18 Footnote)
> and
>
> The recognised routes invariably, and for reasons readily intelligible, run along water-courses and water-holes. (Roth 1897 Ch. IX, Sect. 224)

In other words, Roth has pointed out three requirements for exchange: 1) there must be goods to exchange; 2) there must be material conditions suitable for travel – for example, water in watercourses; and 3) there must be material conditions in the trade centre for people to survive.

Roth (1897, Ch. IX, Sect. 234) recognized the importance of the 'system of inter-communication, necessitated by exchange and barter'. His discovery at Boulia of items he knew were from long distances away (including mother-of-pearl and marine shells) led him to a 'step-by-step' inquiry about how the items had reached their destination. Through this inquiry, Roth learnt the paths of trade routes and how goods and ideas were exchanged. I have summarised Roth's findings and a map of the trade routes in Appendix 1, following McCarthy's three maps. He pointed out that there would always be water along the trade routes. He thought that a study of the trade routes could shed light on the question about 'the source of origin of the Australian Aboriginal – whence he came to be and where he is now found' (Roth 1897, Ch. IX, Sect. 234). This is actually what Davidson was also interested in.

Horne and Aiston also commented on the importance of water and the popularity of pituri in the Lake Eyre district:

> Nowadays there is nothing of the regular touring for exchange; but formerly definite routes were followed, and, I am told, a trading party, keeping on these tracks between water-holes, went unmolested… Kopperamanna…means literally root-hand. As the fingers all lead to the hand, so all roads lead to Kopperamanna, which seems to have been a central position. (Horne and Aiston 1924: 20) and
>
> …even now the chief delight of the aborigine is in pitcheri. This is the leaf and stalk of a bush (*Duboisia hopwoodi*), and when chewed has some narcotic quality. It does not grow near Mungeranie, but far off in Queensland, whither expeditions were sent to obtain it. (Horne and Aiston 1924: 64)

Pituri (spelt pitcheri in quote) was a form of nicotine that was highly sought after by Australian Aborigines and an important trade item (Watson 1983).

McBryde's work on exchange in Australia has been extensive, particularly her work on the Mt William axe quarries (McBryde 1984). McBryde (1987: 260) produced a map that illustrates the major centres in the Lake Eyre region and the flow of trade (Figure 3.12). The legend for Figure 3.12 is in Figure 3.13.

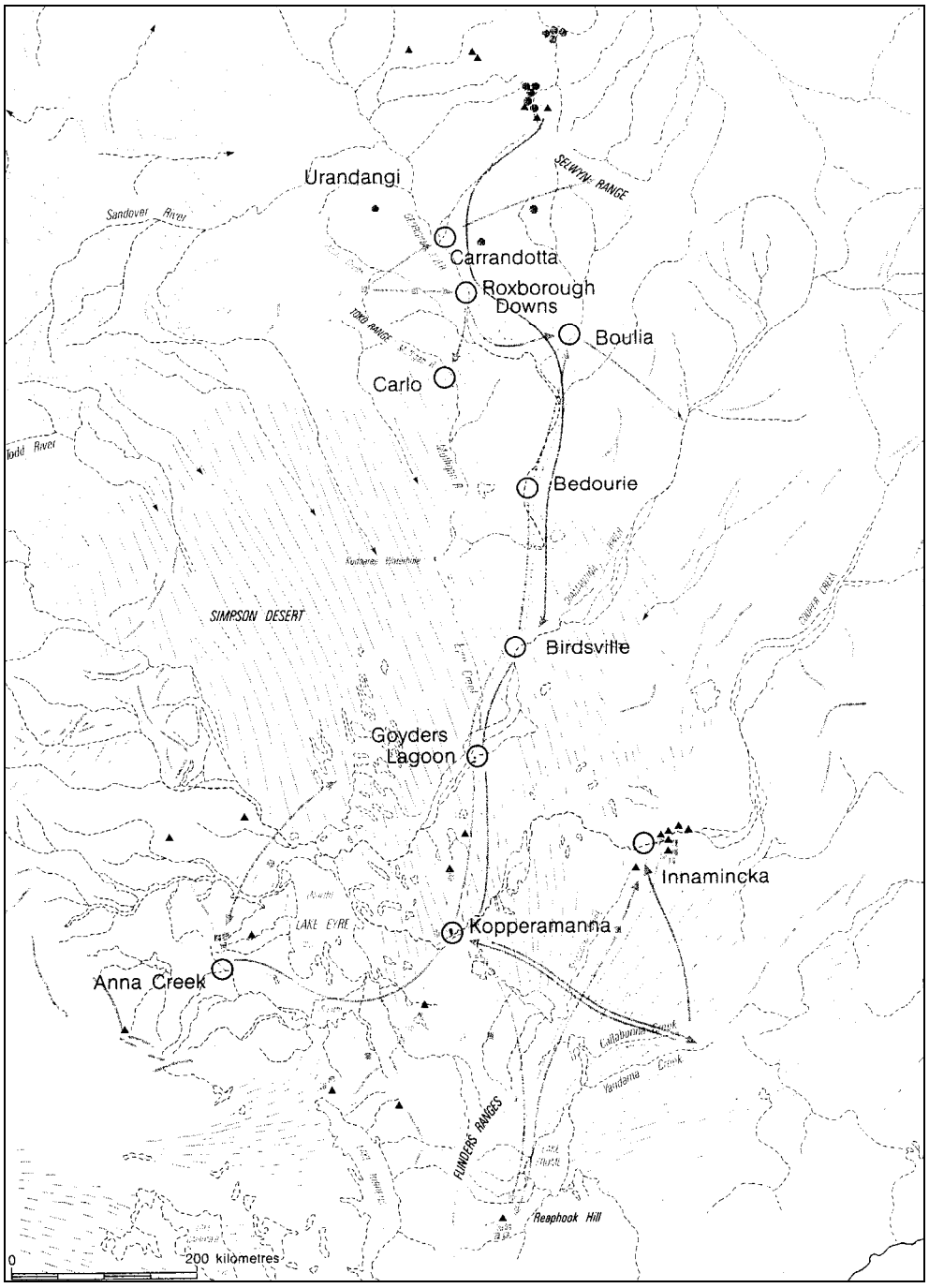

Figure 3.12. Major exchange centres and flow of trade from McBryde (1987: 260)

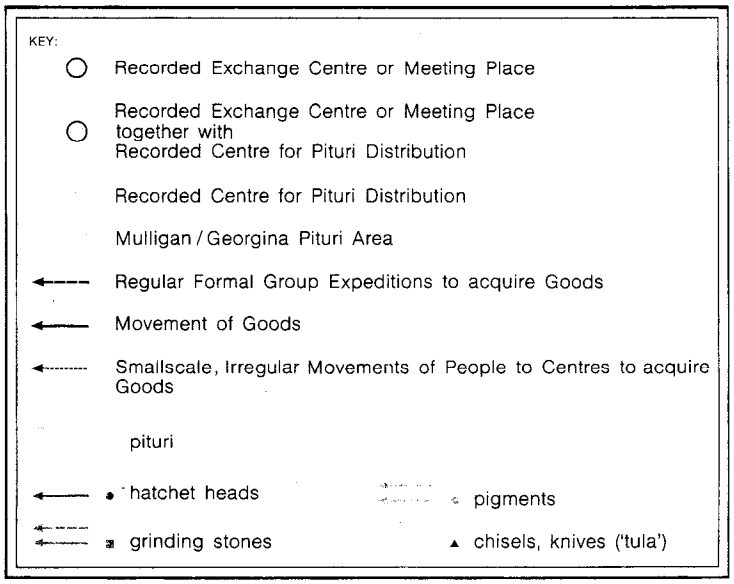

Figure 3.13. Legend for Figure 2.11 from McBryde (1987 261)

Binns and McBryde (1972) had earlier argued that patterning of material culture and drainage basins were associated. While I am aware of the contribution that people like McCarthy, Mulvaney and McBryde have made to the study of exchange in Australia, it is not my intention here to fully discuss the Aboriginal exchange system - as that is a study itself. The focus of this study is on beaded ornaments and the exchange of beaded ornaments has been observed since early contact between Europeans and Aboriginal people.

As early as 1802, the French botanist on the Baudin Expedition, Leschenault, wrote of the exchange of beads at Maria Island, off Tasmania. Leschenault gave necklaces made of glass beads to two Aboriginal men and he wrote of their reaction:

> …one of the last of this group seemed to have some authority over the others…He gave me the necklace he was wearing, which was made of small shells of glistening mother-of-pearl, threaded on a small cord made of bark and grass. He asked in exchange a necklace of glass beads. (Plomley 1983: 130)

The beads were an important item both for giving and receiving goods, which is an example of what Mulvaney (1976) had referred to earlier in this section about the act of the exchange being more important than the economic gain.

The most detailed account of Aboriginal trade of ornaments in the early years of European contact came from Roth, from his work in north-western Queensland and Cape York (1897,

Ch. IX, Sect. 230-233; 1910b, Bulletin 15, Sect. 1-5, 15, 30, 32). Roth mentioned the exchange of ornaments manufactured with eagles' talons, beeswax beads, teeth ornaments and grass bugle necklaces but he concentrated on shells, perhaps because shells were the most prolific exchange item. Several of these items have made their way into Roth's collections, which are included in my research.

Other contemporary Europeans noted the movement of shell ornaments away from the coast. For example, Leichardt (1844-1845: 270) wrote 'certain shells have been seen on the Condamine River'. Horne and Aiston (1924: 101) spoke of the baler shell used in ceremonies by the Lake Eyre tribes 'shells came from the sea originally…from the north' (baler shell is the *Melo* sp., spelling may be 'bailer' in some articles – for this study I will use 'baler' except in quotations).

In south east Queensland, Tom Petrie, brought up in Queensland from the 1830s, commented on the exchange of goods after ceremonies between inland and coastal 'blacks':

> …before leaving any common meeting ground, the aborigines always exchanged possessions. For instance, the inland blacks would give weapons, opossum rugs, dogs, etc., to the coast blacks for dillies made of rushes that grew along the coast, shells for ornaments, and reed necklaces. It was a great practice, this intertribal exchange of various articles. (Campbell-Petrie 1975: 56)

Others have written about the large pearl shell ornaments collected from the Kimberley coastal area. These shells travelled through Cental Australia to areas as far away as Ooldea near the Great Australian Bight at the south of Australia (Bolam, G, 1927: 27, in McCarthy 1939: 97). Davidson (1937: 60-63) noted the engraved pearl pendants from the Kimberley were used for local use and trade. In most cases, the pendants were engraved before trade but they were also traded plain, and incised after exchange.

Daisy Bates observed the exchange of goods in Western Australia. Ornaments exchanged from the north to Broome included:

> …necklaces made of human hair and kangaroo teeth attached with gum, necklaces made with dogs' tails and flying fox fur, arranged button fashion, large pearlshells, grooved and painted. (Bates 1985: 285)

Bates pointed out that in Western Australia:

> Amongst the…personal ornaments exchanged between all these people there will be individual and ancestral markings and also local methods of manufacture, which furnish proofs of identification by the people purchasing them. The further these goods, which are specially marked, are bartered, the greater becomes their value. (Bates 1985: 285)

Obviously, Bates thought decorated objects were a form of communicating identity and that the scale of importance grew with the distance the ornament travelled from the source.

Kaberry, an anthropologist who lived with the people of the Kimberley District in the 1930s, observed the people in the area exchanged goods, including pearl shell, at inter-tribal meetings and at mourning ceremonies (Kaberry 1935: 413). She reported that oval pearl shell pendants (*djaguli*) and bamboo necklaces always travelled from west to east across the Kimberley (Kaberry 1939: 166):

> …the *djaguli* is the most valuable of all, for it is used as a pubic ornament, is a sign of initiation, and is only obtained on the western coast. It was said disparagingly of the eastern tribes that they were "poor", since they had no *djaguli* but must import them from the west. (Kaberry 1939: 171)

On their expedition to Western Australia, 180 miles west of Queen Victoria's Spring, Giles's party came across Aborigines 'one had a large piece of pearl oyster-shell depending from a string round his neck'(Giles 1889. Vol 2: 215). Also in the interior of Western Australia, Carnegie noted pearl shells and commented on the distance they must have travelled:

> Amongst their treasures which they carried, wrapped up in bundles of bark and hair, one of the most curious was a pearl oyster shell, which was worn by the buck as a sporran. Now this shell (which I have in my possession) could only have come from the coast, a distance of nearly five hundred miles and must have passed from hand to hand, and from tribe to tribe. (Carnegie 1898b: 243, 244)

Most information about trade of ornaments has been about shells and very little about objects manufactured from other materials such as teeth, seeds or grass reed bugles. Researchers have produced maps of the trade routes of shell ornaments based on ethnographic information and specimens held in museums. Most information is about pearl shells (example in Figure 3.14) and baler shells (Figure 3.15).

Figure 3.14. Example of pearl shell (*Pinctada* sp.)

Figure 3.15. Example of baler shell (*Melo amphora*)

Davidson produced a map of the distribution and movement of pearl shell ornaments (Figure 3.16).

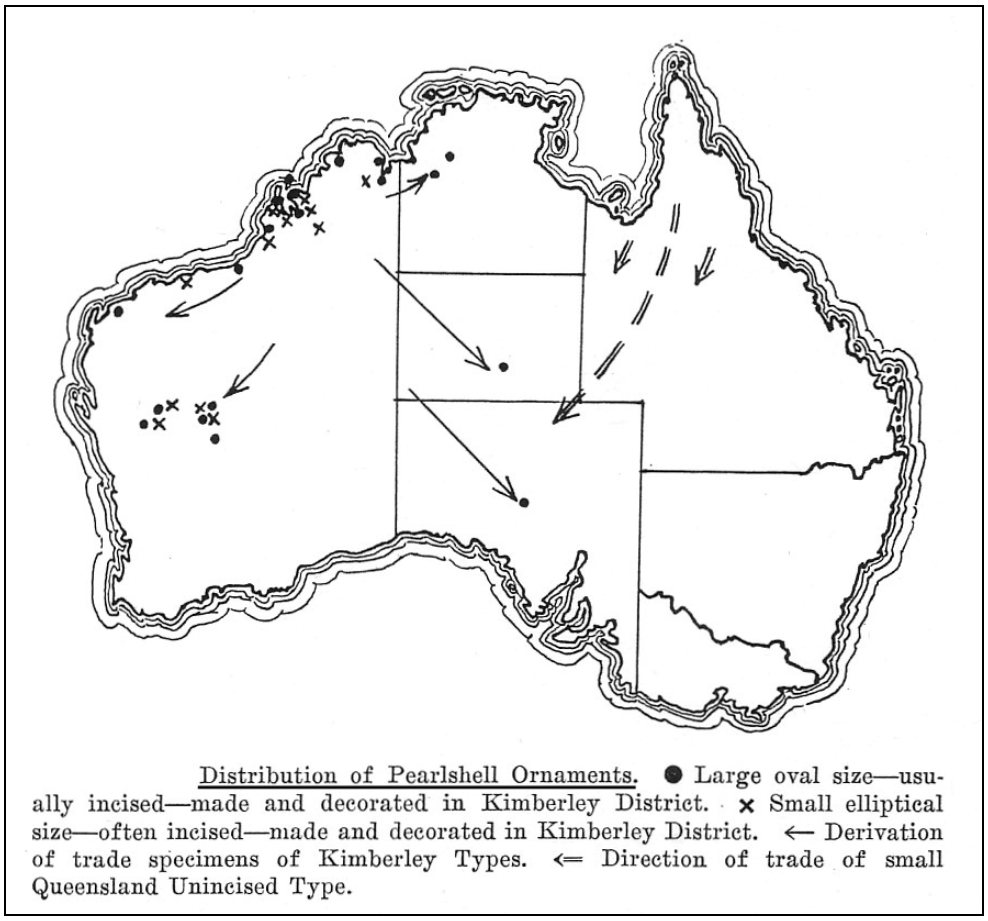

Figure 3.16. Distribution and movement of pearl shell ornaments (Davidson 1937: 64)

Davidson's map shows two separate sources for shells – the Kimberley District in north western Australia and Cape York in northern Queensland. The pearl shell from the Kimberley moved in all directions away from the source while the Cape York shell generally moved towards the centre of Australia.

Mountford and Harvey (1938) constructed a diagram of the movement of baler and pearl shell ornaments in Australia (Figure 3.17).

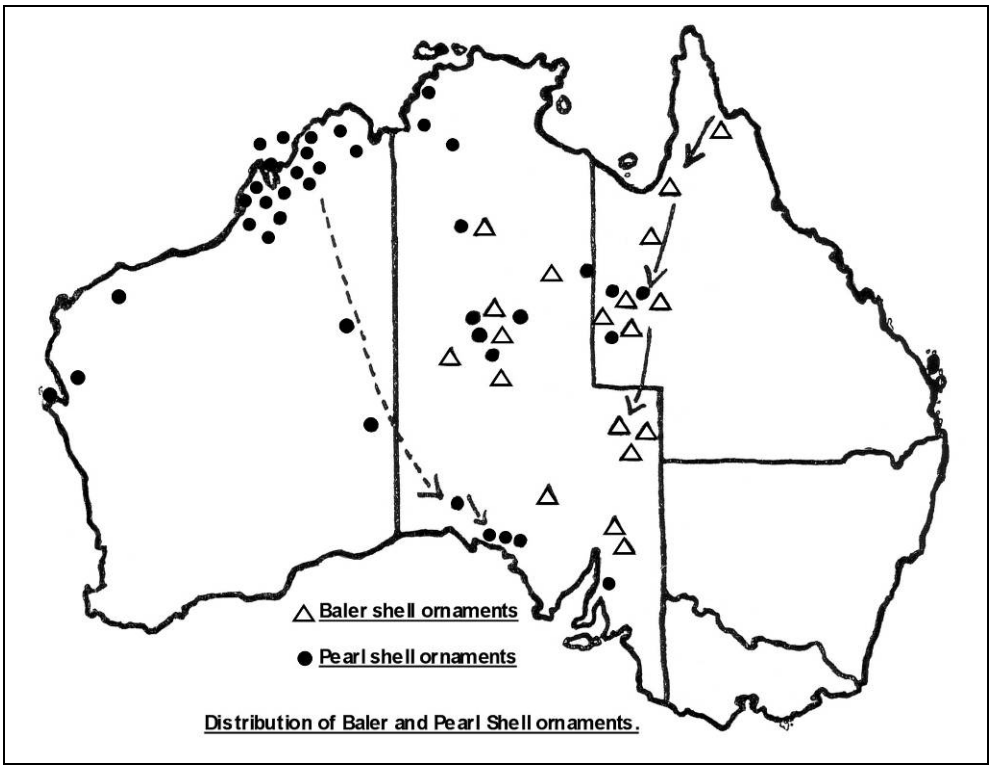

Figure 3.17. Distribution of shell (after Mountford & Harvey 1938: 116)

The map shows a more direct line of movement than Davidson's map (Figure 3.16). Only pearl shell pendants bearing designs, and baler shell (*Melo* sp.) pendants were plotted and no details were provided about what goods the shells were exchanged for. The diagram shows baler shell pendants distributed from Cape York to the Lake Eyre District and to the Flinders Ranges, with incidences of baler shell in southern South Australia and in the Central Desert. Pearl shells were shown distributed from the Kimberley coast region to the Great Australian Bight in South Australia, with scattered locations in Central Australia, Northern Territory and western Queensland, and down the coast of Western Australia. However, while the distribution of shells has been plotted, Mountford and Harvey have not indicated the routes for many of the locations plotted on the map, particularly those through the centre of Australia.

From his studies on material culture in Australia, McCarthy thought:

> The distribution of pearl and baler shell phallocrypts and ornaments forms the most remarkable example of distant trading relationships in Australia. (McCarthy 1939: 93)

McCarthy provided a more complex diagram on shell trade than Mountford and Harvey (Figure 3.18).

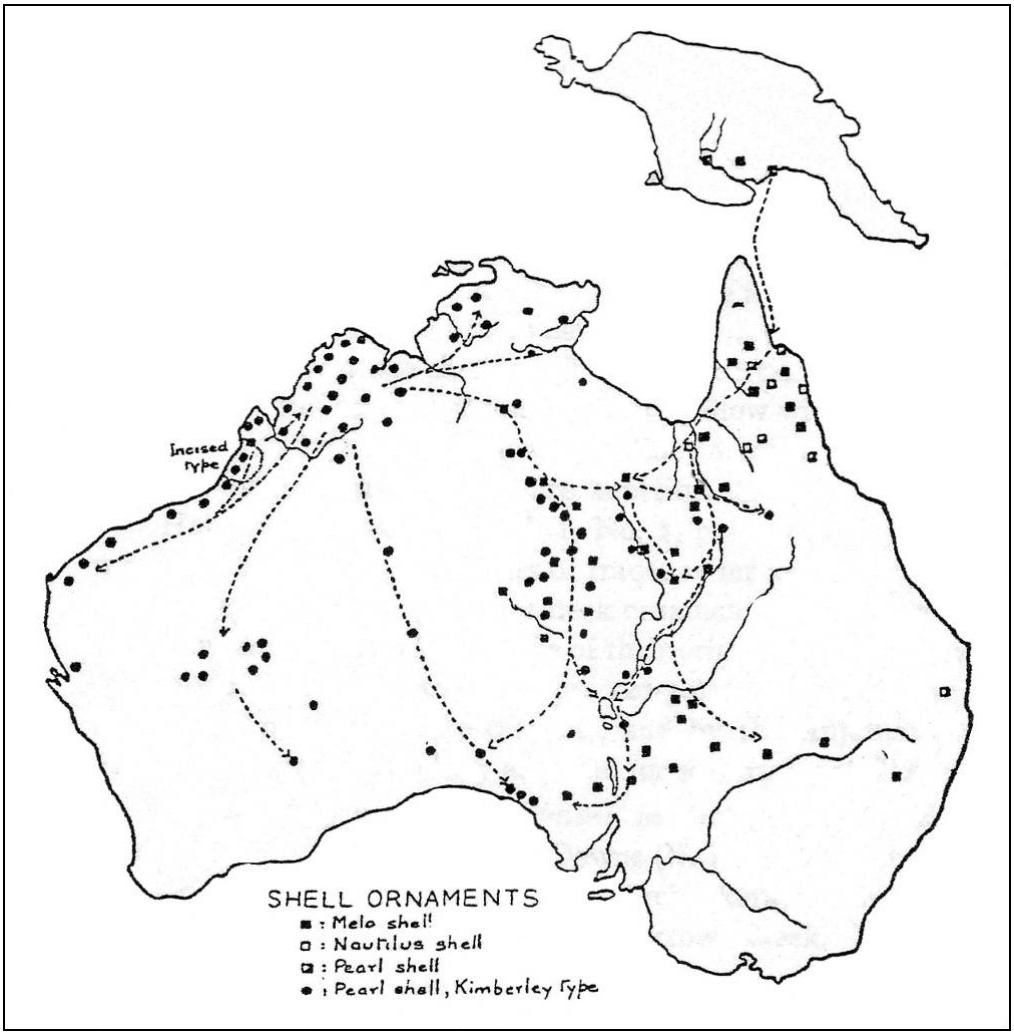

Figure 3.18. Movement of shell ornaments (McCarthy 1939: 93)

McCarthy's (1939: 93) diagram included *Nautilus* sp. shell and he distinguished between the pearl shells from the Kimberley with other pearl shells from Cape York. It is difficult to separate the pearl shells from McCarthy's map, but it he seems to suggest that the Queensland variety was found as far south as south-eastern Queensland and through the Gulf. McCarthy shows more complex movement of the shells away from the major trunk routes.

Mulvaney updated the maps of shell ornament trade in Australia. He pointed out the problems of plotting precise locations because of 'poor provenancing' of museum specimens. In addition, identification of species by ethnographers was inadequate. See Figure 3.19 for baler shell movement and Figure 3.20 for pearl shell.

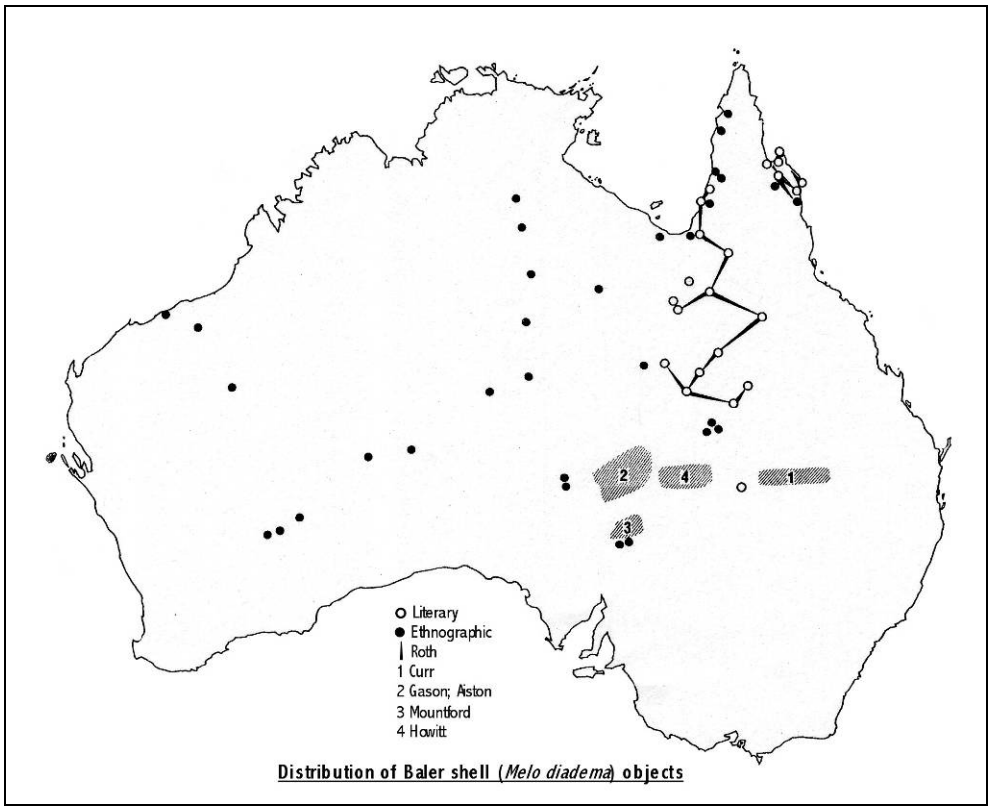

Figure 3.19. Distribution of baler shell objects from Mulvaney (1976: 82)

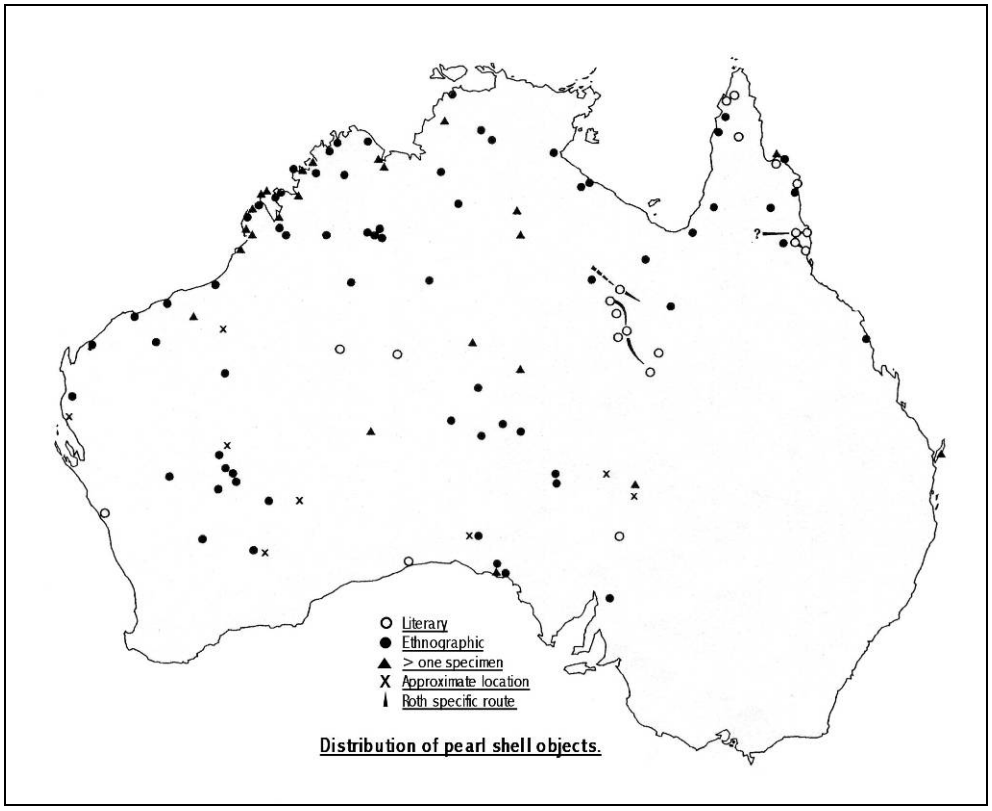

Figure 3.20. Distribution of pearl shell objects from Mulvaney (1976: 82)

Mulvaney (1976: 84) thought that there was insufficient evidence to support general ideas that the baler shell trade on the east coast of Cape York, Queensland, was integrated into the

interior exchange system. He also pointed out that exchange routes would have followed water courses and water holes in drier areas, agreeing with the earlier findings of Binns and McBryde (1972) that patterning of material culture and drainage was associated.

In her work on the exchange networks of the Lake Eyre Basin, McBryde (1987) produced a map on the distribution of baler and pearl shell (Figure 3.21).

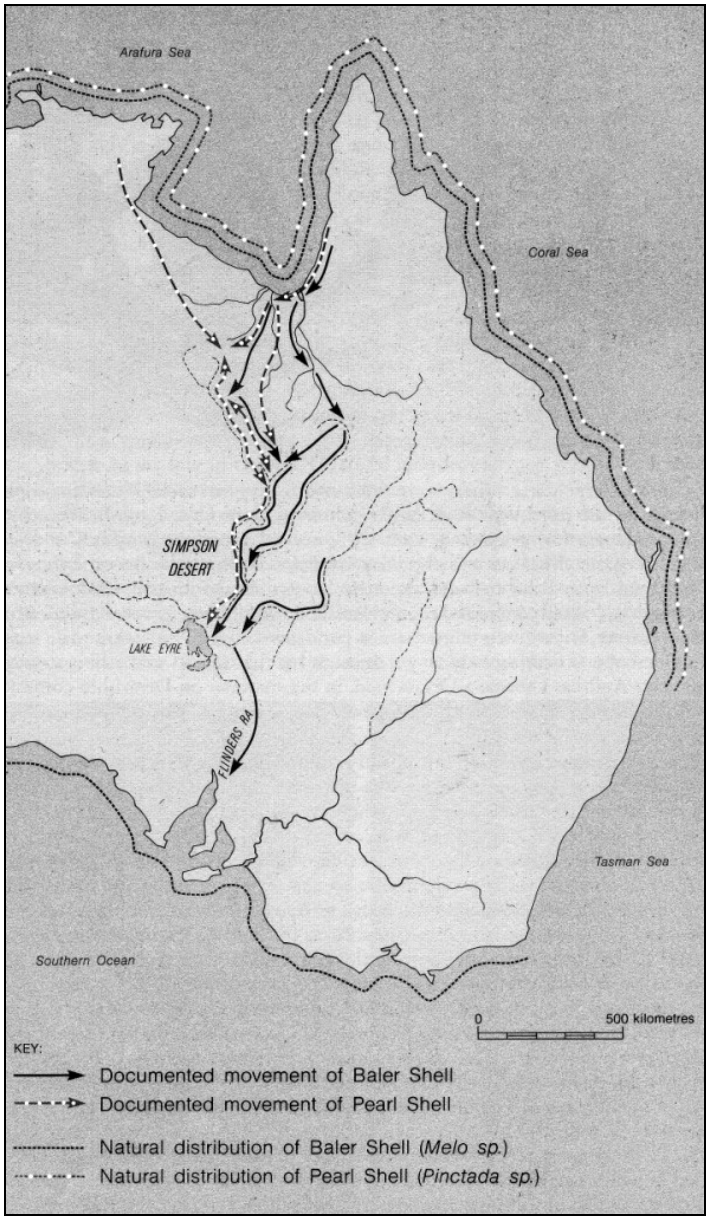

Figure 3.21. Major trade routes for pearl and baler shell from McBryde (1987: 263)

McBryde's map was concerned with the Queensland shell only and does not show the baler shell movement on East Cape York, or the shells in Central Australia. She mentions the pearl

shells from Western Australia and comments on how the shells were used for 'mundane tasks' and 'everyday ornamentation' at the source but 'repeated exchanges had greatly increased their value' (McBryde 1987:264). Also, she emphasises the essential value of the watercourses and holes for movement in the arid regions.

A more complex representation of the movement of shell has been provided by Kim Akerman (in prep. 2008). Akerman has added his own research and observations to Mulvaney's map to produce his versions of the trade routes (Akerman and Stanton 1994: 15). Figure 3.22 shows the distribution of baler shell, showing shell moving from the Western Australian coast according to Akerman.

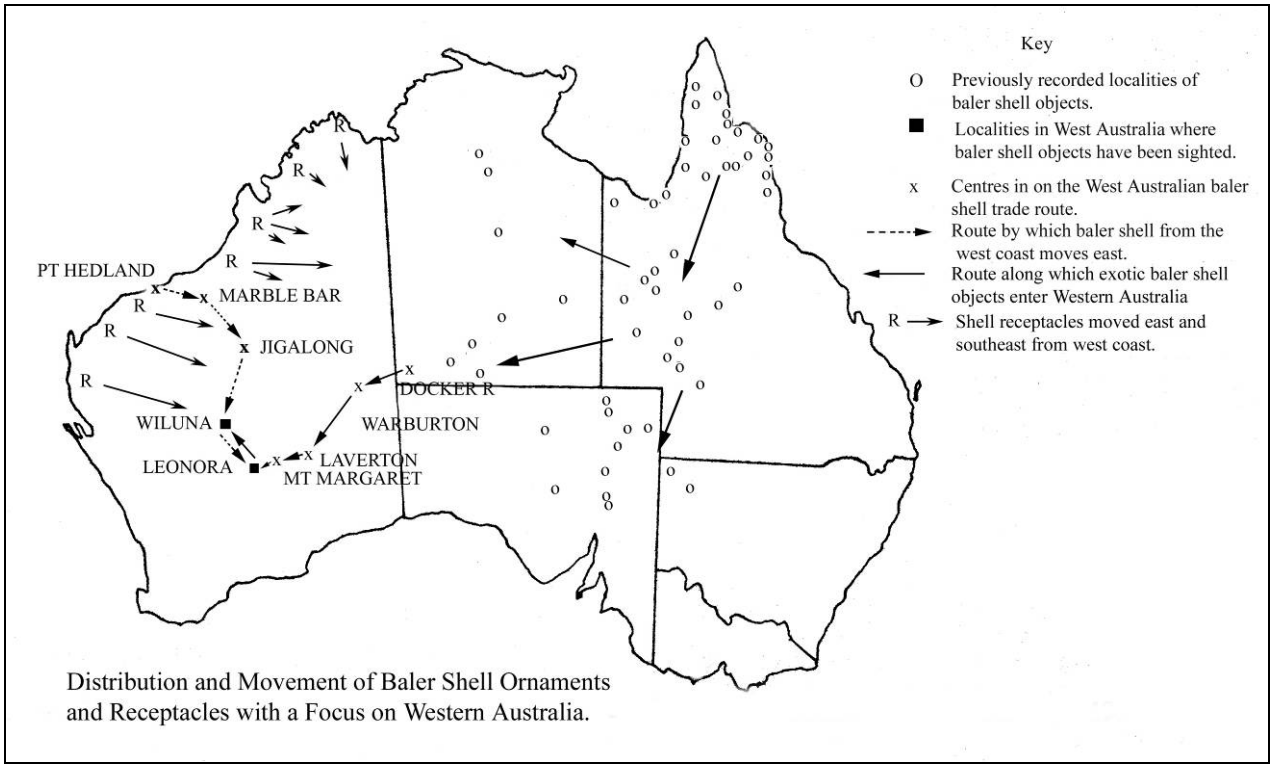

Figure 3.22. Distribution of baler shell objects with permission from Akerman (in prep. 2008)

Akerman has not proposed any specific routes for baler shell ornaments in Queensland. Instead he has provided a more general flow of the shells. According to Akerman, the baler shell objects from Queensland moved across to central Western Australia. If this is so, then the baler shell was exchanged or traded a similar distance to the Western Australian pearl shell (Figure 3.23).

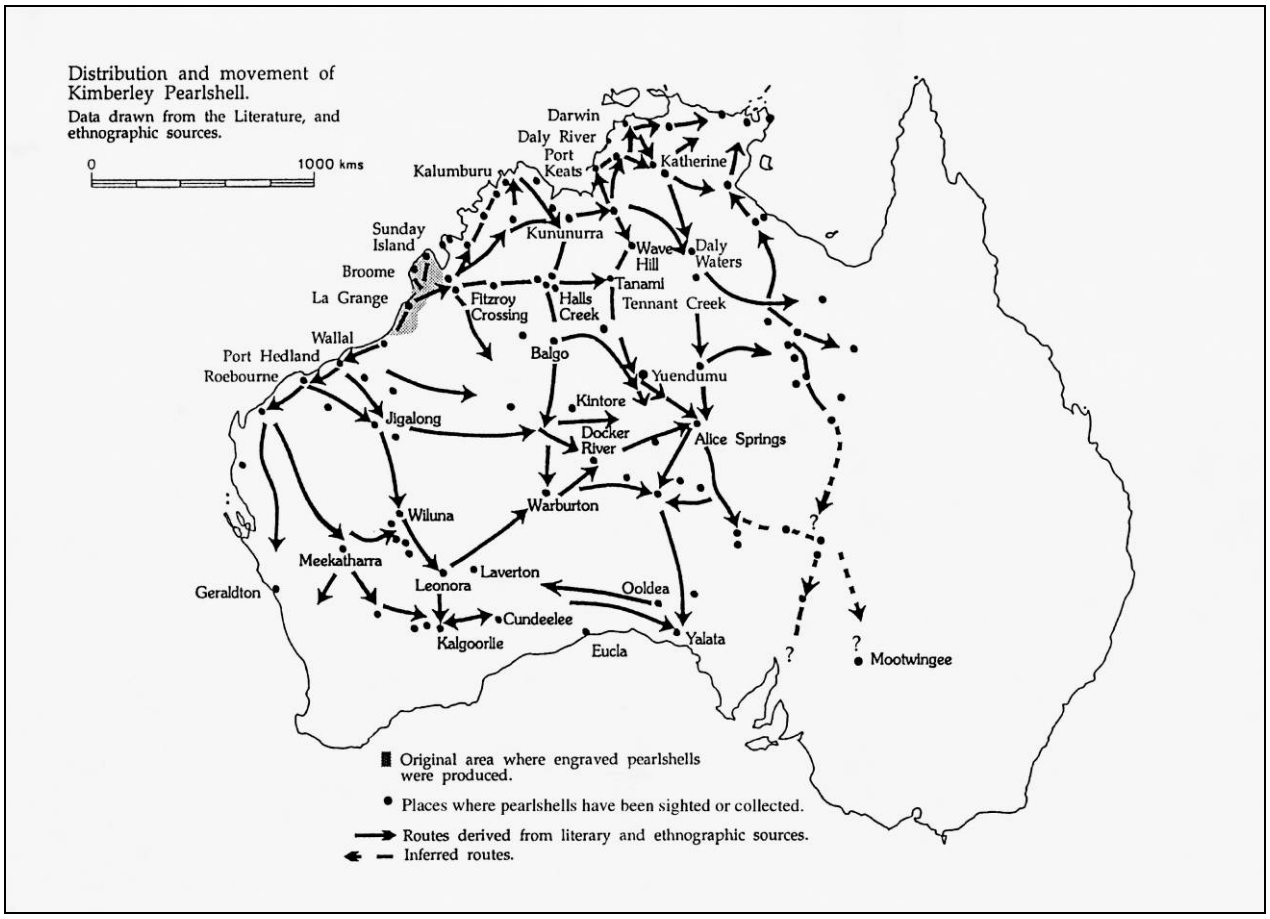

Figure 3.23. Distribution of pearl shell objects with permission from Akerman (1994: 14, in prep. 2008)

Akerman's interpretation of the pearl shell movement emphasises the complex nature of their movement. The shells travelled north, south and east with sideline tracks from the major trunk routes. Akerman has implied that pearl shell travelled as far east as Mootwingee in New South Wales and Boulia in western Queensland (Akerman and Stanton 1994: 15). In addition to mapping baler and pearl shell, Akerman considered Scaphopoda shells (common name tusk shell) as shown in Figure 3.24 and its distribution (Figure 3.25).

Figure 3.24. Scaphopoda shell (common name tusk shell). Shell provided by Mark Moore, UNE.

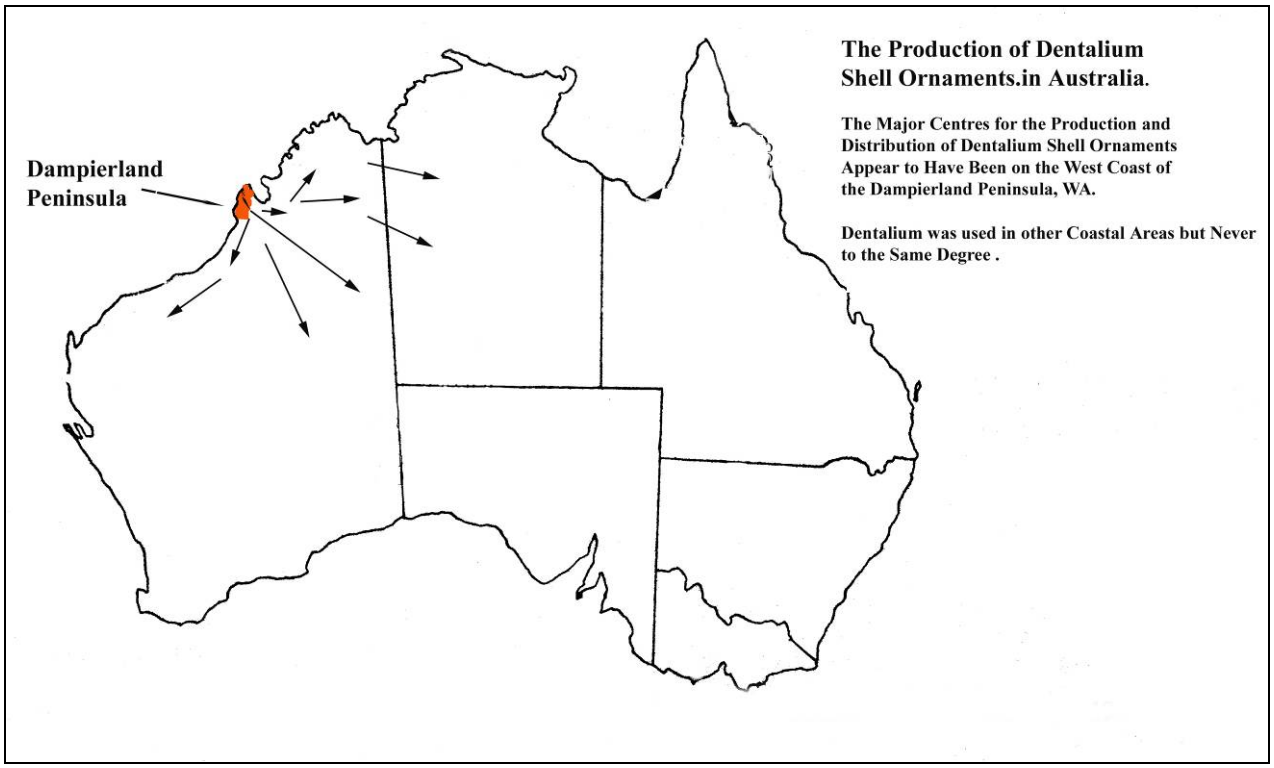

Figure 3.25. Distribution of *Dentalium* sp. shell objects with permission from Akerman (in prep. 2008)

The *Dentalium* sp. (tusk shell) beads originate in the Dampierland (or Dampier) Peninsula and the distribution spreads north and south along the coast and inland. Tusk shell necklaces are found in Cape York but Akerman's research has led him to believe that those from Western Australia are more highly regarded as exchange goods because they are sturdier. In addition, they are a whiter colour than those from other areas (Akerman in prep. p. 42). Tusk shell is most important because of the archaeological finds of this shell at Riwi in Western Australia that date to over 30,000 years (Balme 2000; Balme and Morse 2006; Morse 1993).

The trade/exchange of beaded ornaments is a valuable starting place for the study of beaded ornaments in Australia. For the purpose of this analysis, the slight differences between the maps will not be vital – the scale of geographic detail in the collections does not warrant more extensive differentiation. The mapping of the objects from ethnographic literature and collections has provided a base on which to evaluate the sample in my own study. The role of trade or exchange in the distribution of ornaments will be considered when interpreting the results from my analysis.

3.7 Conclusion

From this chapter, I have noted the historical approaches of placing Aboriginal people and their material culture within the Australian landscape. The impact of the Great Dividing Range as a cultural barrier has been suggested and watersheds appear to have some influence on the spatial distribution of particular traits. Added to that, the adaptive measures that Aboriginal people would have employed to survive in harsh environments should lead to differences in material culture to those living in coastal areas or in isolation - like Tasmania.

This chapter has shown that beads were valuable commodities in Aboriginal exchange. However, their value varied both locally and with distance from the source of the raw materials. Major issues that need to be considered when looking at the distribution of beads and exchange include standardisation of form, and the role of the waterways for facilitating exchange.

Much of the ideas and conclusions drawn by researchers on the distribution of material culture and the movement of goods along exchange routes have been gathered from information observed by the writers themselves or from contemporary European accounts of Aborigines in Australia. Another source of information for the distribution of ornaments comes from the archaeological record. In the next chapter, I will discuss the archaeological evidence for beads in Australia.

CHAPTER 4 ARCHAEOLOGY OF AUSTRALIAN BEADS

4.1 Introduction

From the last chapter, beads played an important socio-economic role for Aborigines at the time of first European contact, and the archaeological record indicates that it is possible that this tradition had been in place for tens of thousands of years. The archaeological evidence for Australia is not large in quantity but it is rich in terms of time depth. As mentioned in Chapter 1, shell beads have been recovered in Australia dated well into the Pleistocene. In this chapter, I will describe the archaeological evidence for beads in Australia, to the best of my knowledge. The distribution of archaeological sites will be discussed with the distribution of my sample from museums in Chapter 11, where I will discuss both of those sources of evidence in context with literature written in the late nineteenth and early twentieth centuries about the Aboriginal use of beads.

4.2 Archaeological evidence of beads in Australia

Australian Aborigines were modifying and decorating a variety of materials over a long period of time. For example, Figure 4.1 shows grooves incised into a megafauna. tooth (*Diprotodon* sp.) found at Spring Creek in south-western Victoria (Vanderwal and Fullagar 1989: 16). The tooth is dated 19,000-20,000 BP and microscopic examination showed twenty-eight evenly distributed grooves thought to have been cut into the tooth shortly after death. *Diprotodons* have been extinct in Australia since the late Pleistocene.

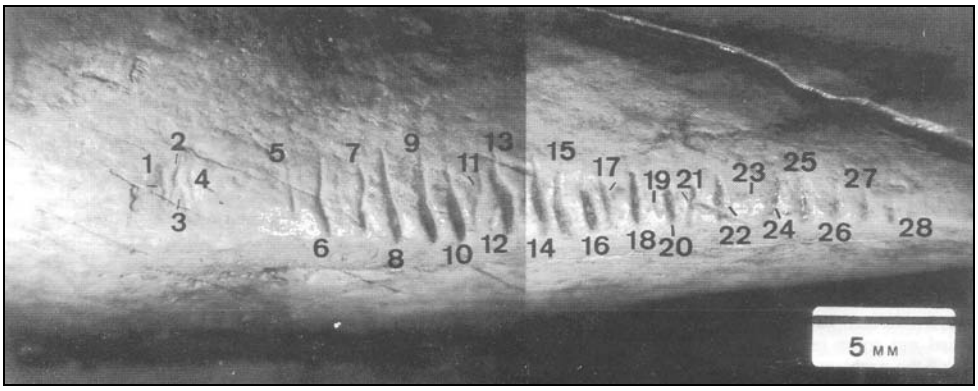

Figure 4.1. Grooves in Diprotodon tooth from Vanderwal & Fullager (1989: 16)

The function of the grooves is not known, but the repetition of the act of cutting suggests that it was done deliberately. As there is no meat on teeth, it is reasonable to suppose these marks were made with the intent that might be related to decoration or ornamentation.

Fragments and unmodified whole shells have been recovered from archaeological sites in Australia and show evidence of the movement of shell away from the coast. For example, small pieces of baler shell were found near springs and Aboriginal wells along the Percival Lakes in the Great Sandy Desert, Western Australia (Smith and Veth 2004). The shell fragments were dated to between 50 years BP to 2,260 years BP. The authors assumed the shell originated from the west coast of Western Australia, 400 kilometres to the west of the sites.

Fragments of baler shell have been recovered from Pleistocene deposits in other sites along the western coastline and adjacent islands (Bowdler 1990; O'Connor and Veth 2000). Baler shell from the West Kimberley 70-100 kilometres from the coast and been dated to around 28,000 years (O'Connor 1999). Although the fragments showed no signs of modification and cannot be interpreted as a specific type of implement or ornament, this shows the inland movement of baler shell occurred over a long period of time. For this project, I am interested in the variation of ornament forms and therefore my focus is on objects that can be identified, where possible, to a particular form.

There is a paucity of archaeological evidence for beaded ornaments in Australia. The oldest beads recovered archaeologically are over 30,000 years old from Western Australia and were

manufactured from shell. The distribution of archaeological evidence for beads is summarised in a table in Appendix 2 and plotted in Figure 4.2.

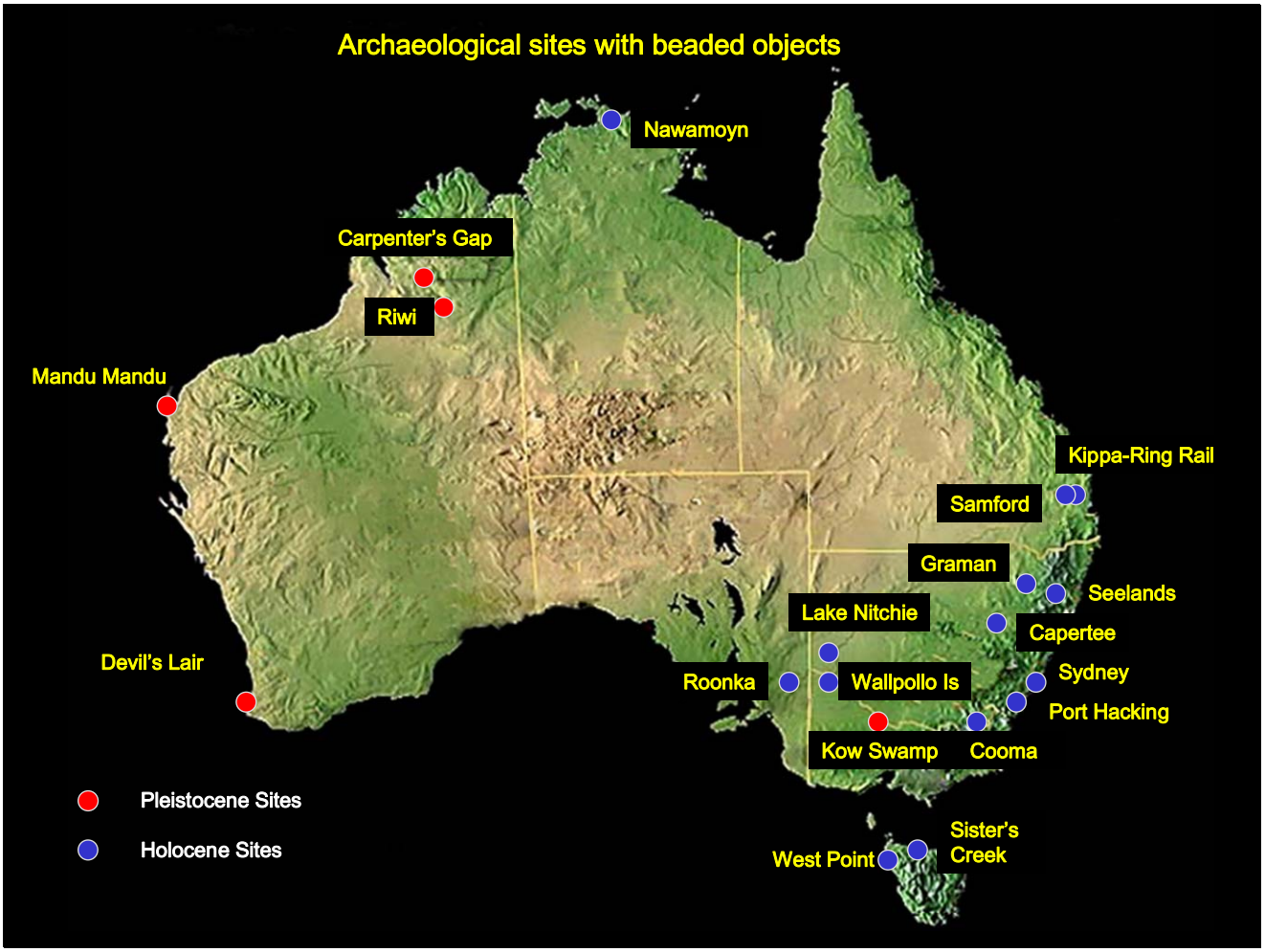

Figure 4.2. Archaeological sites with beads in Australia

The majority of archaeological sites are in south-eastern Australia although, with the exception of one site in Victoria (there is some doubt about the date), claims for Pleistocene sites are all in Western Australia. Holocene sites are mainly clustered in the south eastern section of Australia. Material recovered from archaeology is predominantly shell and teeth, with smaller samples of stone and bone. It is unlikely that perishable material such as grass or reed stems will survive in the archaeological record.

4.3 Pleistocene archaeological sites

At Mandu Mandu rock shelter in Western Australia (Morse 1993), twenty-two modified *Conus* sp. shells were excavated, dated to around 32,000 BP (Figure 4.3). The apex of six shells had been perforated and internal whorls removed. Some shells displayed abraded notches, consistent with wear from a threaded string. Several rings have been manufactured from the spire of shells that were perforated. Shells of these genera are abundant and can be collected from 'beach drift'. The shells have been selected for 'size and genera'. Fragments of cone shell were found in later layers (c.21,000 BP) as were fragments of ochre, Scaphopod (tusk shell) and pearl shell (Balme and Morse 2006; Morse 1993). The authors argue there was a 'continuing tradition' of using marine shells for decorative purposes.

Figure 4.3. *Conus* sp. shell beads from Mandu Mandu rockshelter Photograph taken by J. McAdam, courtesy of Western Australian Museum

Tusk shell beads (class Scaphopoda) were recovered from a limestone cave at Riwi, Western Australia, along with ochre, bone, stone artefacts and freshwater mussel shell. The tusk shell beads, dated to around 30,000 years BP, have been broken and sawn into small segments and exhibit wear characteristic of rubbing of string. The shell is not a food source and both Riwi and Mandu Mandu shells are standardised in size. The beads have a mean measurement of 12.5 mm and red ochre was visible on the shell. Balme and Morse (2006: 807) point out that red ochre residue is visible on ethnographic class Scaphopoda shell beads held in the Western Australian Museum. Other similarities with museum specimens include: size; same part of

the shell used; and the process of manufacture. Museum specimens were sometimes parts of bead series strung on fibre and the series could reach more than four metres in length.

The Scaphopoda shell lives in sub-tidal areas but may be found washed up on beaches. The shell is available in modern times and still manufactured into beads on the Kimberley coast. At the time the Riwi beads were made, the coastline was over 500 kms from the site (Balme 2000; Balme and Morse 2006).

Scaphopod shell beads have been recovered from a limestone cave at Carpenter's Gap Shelter 1, in the Kimberley (O'Connor 1995; 1999). The details of the site are not published as yet but Balme and Morse (2006: 789) see apparent similarities in the age and context of the site. Balme and Morse (2006: 808) point out:

> …the Kimberley shells are amongst the earliest evidence for the long distance procurement of raw materials in Australia and in this context it is interesting that the exotic items are decorative objects.

The Kimberley has produced the earliest archaeological evidence for beads in Australia.

Again from a limestone cave in Western Australia, a team from the Western Australian Museum recovered three bone beads made from the fibulae of a macropod (Figure 4.4). The beads were found in association with red ochre and a possible marl pendant (Bednarik 1998; Dortch 1979; 1980; 1984).

Figure 4.4. Devil's Lair macropod bone beads. Photo from Flood (1995: 84)

The bone beads are the only evidence of this kind in Australia from the Pleistocene. If the marl pendant is confirmed, then it will be the only stone pendant from the Pleistocene.

Flood (1995: 61) described a headband made with kangaroo teeth that was recovered among grave goods at Kow Swamp in Victoria, dated around 12,000 years BP (Flood 1995: 61; Thorne and Macumber 1972). Ochre, mussel shell and stone artefacts were amongst the other grave goods. There were traces of resin on the kangaroo teeth. The resin was probably used for attaching to string. In the nineteenth Century, Aboriginal men and women in the Central Desert were wearing this type of object. Kow Swamp contained the only object from the Pleistocene manufactured with teeth. However, ornaments made with teeth occur more frequently at Holocene Sites. There is some question on the age of this object. The most detailed description is in Flood (1995) which, being a popular text, does not provide complete documentation. I was unable to obtain a primary source about this object. If the object is from the Pleistocene, it is the only ornament manufactured with teeth that has been recovered outside the Holocene and it is the earliest in Australia using resin to attach teeth for suspension.

4.4 Holocene archaeological sites

At least 5,000 years later than Kow Swamp, a burial site dated to around 7,000 years was exposed during a flood event at Cooma in the Southern Tablelands, New South Wales in 1991 (Cohen 1993; Feary 1996). The burial contained the skeletons of a woman and a young man and an assortment of grave goods including 327 pierced kangaroo and wallaby teeth. The teeth were from at least 160 animals as the teeth were all upper first incisors and believed to be have been pierced with an 'awl-like instrument' for stringing together to form a necklace as in Figure 4.5. A close up of a perforation is shown in Figure 4.6. Teeth associated with the female skeleton showed evidence of grooving associated with wear from fibre rubbing the teeth during string manufacture.

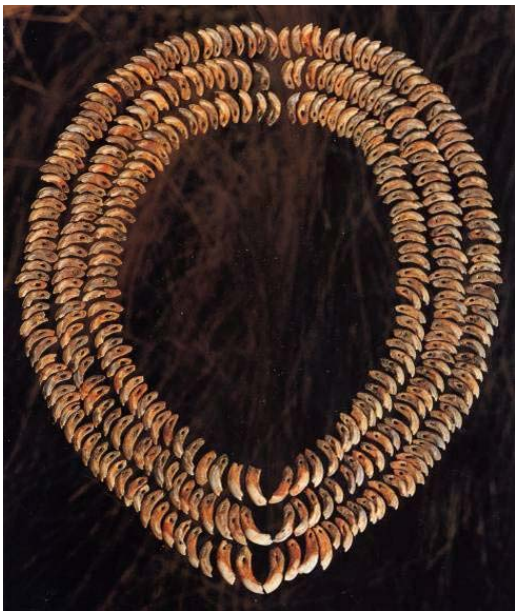

Figure 4.5. Pierced kangaroo teeth from Cooma, N.S.W. from Geo Australasia (Cohen 1993: 55)

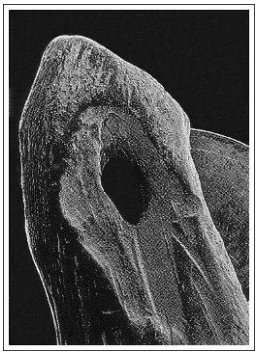

Figure 4.6. Perforation through root portion of tooth from Geo Australasia (Cohen 1993: 54)

The authors (Cohen 1993; Feary 1996) argue that the burial is evidence of ritual burial and that the individuals were people of 'special status' within their community. Of interest, is that seasonal gatherings of different tribes occurred in this area, coinciding with summer breeding of the bogong moths. The moths provided a food supply that was high in protein and could sustain a large number of people. Flood (1995: 239-240) argued that this economic activity had been going on for 1,000 years and there was a may have been established prior to 7,000 years ago.

At Lake Nitchie in New South Wales, pierced Tasmanian Devil (*Sarcophilus harrisii*) canine teeth were recovered with a male burial. This animal became extinct on the mainland some time in the Holocene. The Lake Nitchie burial and its associated necklace have been dated at 6,500 – 7,000 years BP (uncalibrated) (Macintosh et al. 1970). The necklace was

manufactured with 178 pierced teeth from at least 46 to a maximum of 100 animals (Figure 4.7).

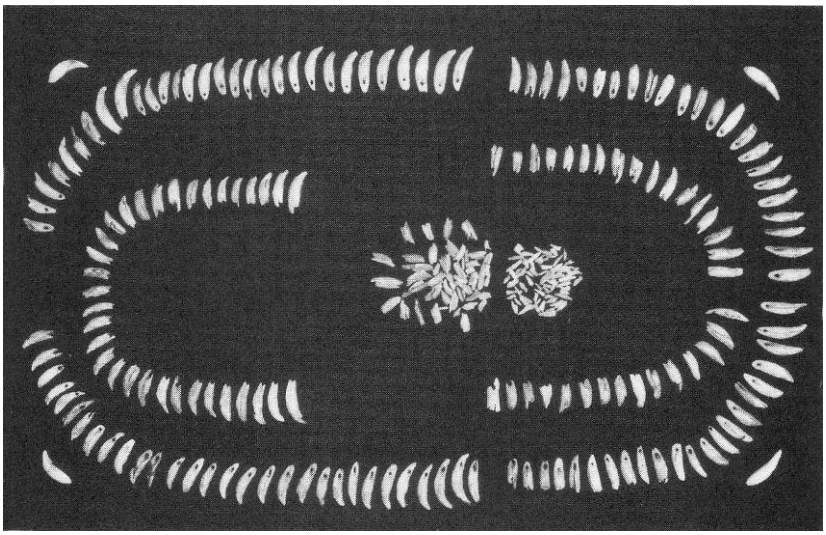

Figure 4.7. Tasmanian Devil teeth recovered from Lake Nitchie from Flood (1995: 62)

Pardoe (1995: 705-706) mentions a second set of pierced Tasmanian Devil canines that was recovered at Wallpolla Island on the Murray River, Victoria. The pierced teeth were in the head and neck area of the grave and Pardoe claims the teeth have features of nearly identical mean and standard deviation as the teeth from Lake Nitchie (those teeth have a 14C date around 7,000 years BP). In an email communication on 10 March 2008, Colin Pardoe was confident there were cultural similarities between Walpolla Island and Lake Nitchie, especially in context with the interaction between the Darling and Murray Rivers. Pardoe has indicated a full report may be available in future.

At Roonka (Pretty 1977: 301), on the Murray River in South Australia, an excavation level dated around 4,000 years BP contained some 70 inhumations. Some were accompanied with ornaments. One burial contains a man and child (Pretty 1977: 305). The man's skull shown (in Figure 4.8) has a wallaby teeth headband which has become cemented to the head through time. The teeth have been notched for attaching string. A second band of wallaby incisors (made in a similar style) lay across the man's arm. A pendant made from a bird skull and a necklace of reptile vertebrae were with the child. Traces of ochre were found on the feet of the child and other items of personal adornment were found in the burial.

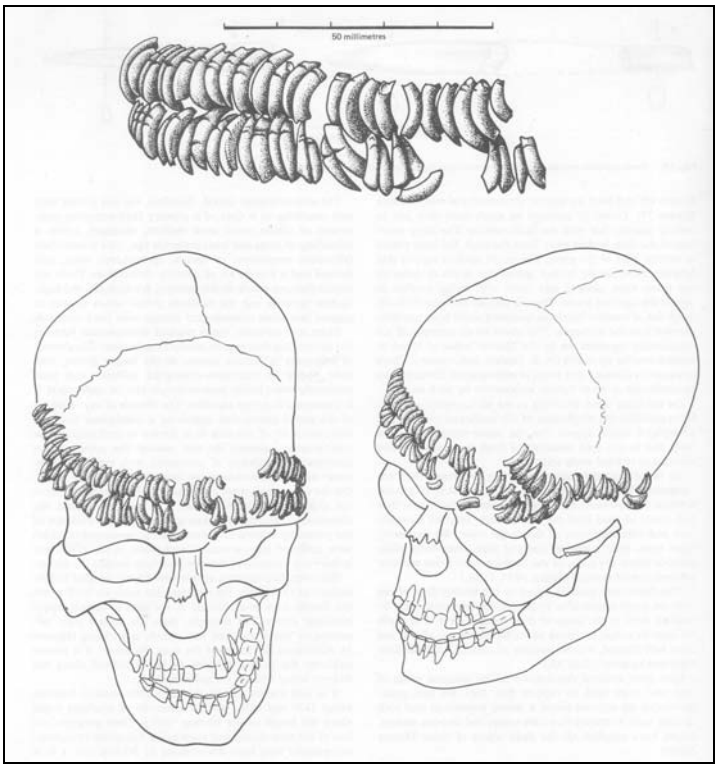

Figure 4.8. Wallaby teeth headband at Roonka from Pretty (1977: 314)

Also at Roonka, one level down in the excavations, two ornaments were found associated with burials dated between 7,000 and 4,000 – one grave contained two perforated jaw bones of native cat (*Dasyurus* sp.). Another grave contained a disc made from an oyster shell with two drilled holes (Pretty 1977: 315, 317). See Figure 4.9.

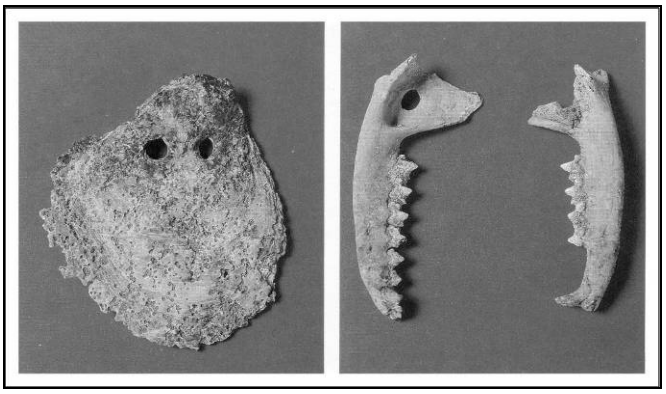

Figure 4.9. Pierced shell and jaw bones of native cat adapted from Mulvaney (1987: 103)

There have been claims for beads in sites in eastern Australia and Tasmania. McBryde (1974: 320-322) recovered two perforated stone 'pendants' from Level 1, Site GB1 at Graman (Figure 4.10). The level was dated at 4,640 ± 100 BP. McBryde considered the finds had 'no parallels in New England'.

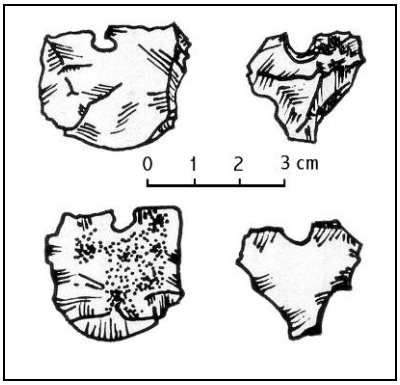

Figure 4.10. Perforated stone 'pendants' from Graman (McBryde 1974: 321)

McBryde (1968; 1974: 320) pointed out the only other claim at the time for a perforated stone pendant was a fragment of stone from Sister's Creek on the northern coast of Tasmania thought to be a pendant. Sister's Creek has been dated to around 6,000 years BP (Flood 1995; Jones 1966). Jones described the object:

> …a piece of soft micaceous shale (1.9 inches by 0.7 inches) with a small circular hole drilled or cut into it. The shale had split in prehistoric times across part of the whole. This is to my knowledge a unique implement from Tasmania and when complete could have been used as a pendant. (Jones 1965: 195)

Also in Tasmania, thirty-two perforated shells were excavated from cremation pits at West Point, Tasmania, dated to around 2,000 years BP (Jones 1966:8-9). Jones argued that in that phase, people were making specialised tools and engaged in exploiting young seals.

Irish (2007) has claimed that the square perforations in four black periwinkle shells excavated from a midden at Bundeena Creek, near Port Hacking, south of Sydney, New South Wales, were culturally made with a stone or shell blade (Figure 4.11). The shells are in association with a possible burial and Irish provides dates of between 1,000 and 2,000 years BP but it is not clear if that is the level that the shells were recovered from. Harper (1899) had claimed that six black periwinkle shells with similar square perforations had been ornaments. Those shells are held in the Australian Museum.

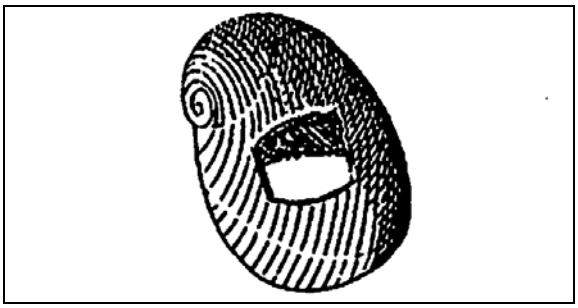

Figure 4.11. Illustration of periwinkle shell with square cut perforation from Irish (2007: 47)

At Capertee in the Blue Mountains, New South Wales, McCarthy excavated a perforated mussel shell he identified as 'perforated at one end for threading on a string'. The shell was from Bondaian layers 1-5, no definite date was given. McCarthy (1964: 222) argued the shell was part of a series.

McBryde (1974: 194-195) recovered a perforated nacreous, rectangular shaped fragment of turban shell from an upper layer at Seelands rockshelter, New England, New South Wales. The perforation had been sawn. McBryde identified the shell as a pendant for suspending on the head or chest as both uses had been documented for eastern Australia and the shell was common in the Clarence District in ethnographic times.

A pierced upper incisor of a kangaroo and three pierced shells were recovered from upper levels at Nawamoyn rockshelter in the Northern Territory (Figure 4.12). The shells include: 1) a *Geloina* sp. valve with a round perforation - a possible pendant; and 2) two perforated ark shells (*Anadara granosa*) – one covered with red ochre (Schrire 1982). There was continued marine shell use throughout the midden indicating to the author that there may have been trade in existence with coastal groups for 7,000 years (Flood 1995: 240). This is a similar time span that Flood proposed for the bogong moth site in the southern Tablelands at the opposite end of the continent.

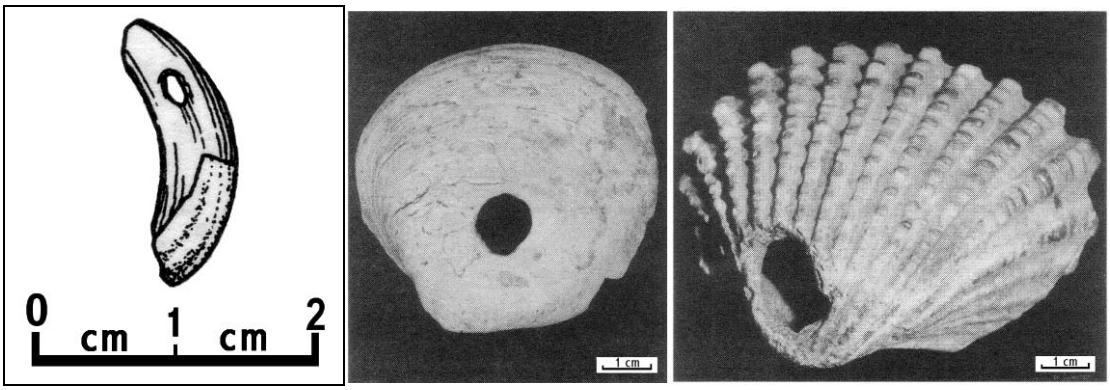

Figure 4.12. Pierced kangaroo teeth and shells from Nawamoyn (Schrire 1982: 127, 129)

Two separate finds of macropod teeth necklaces/headbands set in gum have been found west of Redcliffe during archaeological surveys in south east Queensland. The first was found at Samford protruding from soil in a Melaleuca swamp (Figure 4.13) and now housed in the Queensland Museum. The other was collected on the second Petrie-Kippa Ring Transport survey (GHD_Pty_Ltd 2003; Hill 1980).

Figure 4.13. Kangaroo teeth headband (Hill 1980). Photograph by J. McAdam courtesy of the Queensland Museum

Cemented or gummed teeth have come from thousands of kilometres away on the opposite side of the continent. Between 1966-67 Akerman (1973a: 139-141) acquired a number of charms from south western Kimberley, Western Australia. Most were kangaroo teeth but one is a *Zygomaturus* genus tooth set in gum, suspended on a single strand hair string and used 'in a form of projection magic'. Also, in a wallet, there were four loose teeth given to him as hunting charms or increase objects. The teeth were identified by the Curator of Palaeontology, West Australian Museum (Dr. Merrilees) as belonging to the extinct marsupial *Sthenurus.* The nearest location for these animals at the time was the Murchison River for *Zygomaturus trilobus,* and Wanneroo, near Perth for the extinct *Sthenurus brownie* (similar in size to a large grey kangaroo). Neither species had previously been recorded in the

Kimberley District. All teeth exhibited red matrix, presumed to be ochre. Akerman believed that the teeth were very old and 'had recently been exposed'. To my knowledge, no other teeth set in cement have been recovered archaeologically in Western Australia.

Other possible beaded objects with insecure or no dates, or poorly provenanced have been recovered. Examples of these include:

- three baler shell. pendants recovered from excavations at Cape Range Peninsula, Western Australia. All have red ochre on them and two are pierced (Przywolnik 2003: 19, 20).
- Schall (1988: 19) wrote about a *Dentalium* sp. necklace recovered from Mornington Island, in the Gulf of Carpentaria. Schall quotes a personal conversation with Kate Sutcliffe as a reference. I have not been able to find out more about this find. If this is so, it is the only *Dentalium* sp. ornament found archaeologically in Queensland or off-shore.
- At Bunbury, a perforated fragment of *Haliotis laevigata* (Abalone shell) was recovered (Akerman in prep.) – no date.
- Irish (2007: 48) mentions a pierced and shaped rock oyster (*Saccostrea glomerate*) that was collected by Eugene Stockton at Reef Beach and is currently held in the Macleay Museum at the University of Sydney, New South Wales.
- A perforated tooth (Figure 4.14), identified by Kim Akerman as a Port Jackson Whaler, was collected during salvage at Parramatta, west of Sydney, New South Wales. McDonald claims that this tooth is very similar to those being worn in the hair of Aborigines during early contact years (J. McDonald 2008, pers. comm.).

Figure 4.14. Pierced fish tooth from Parramatta, NSW. With permission McDonald (2005: 36)

The distribution of archaeological finds according to raw material is plotted in Figure 4.15.

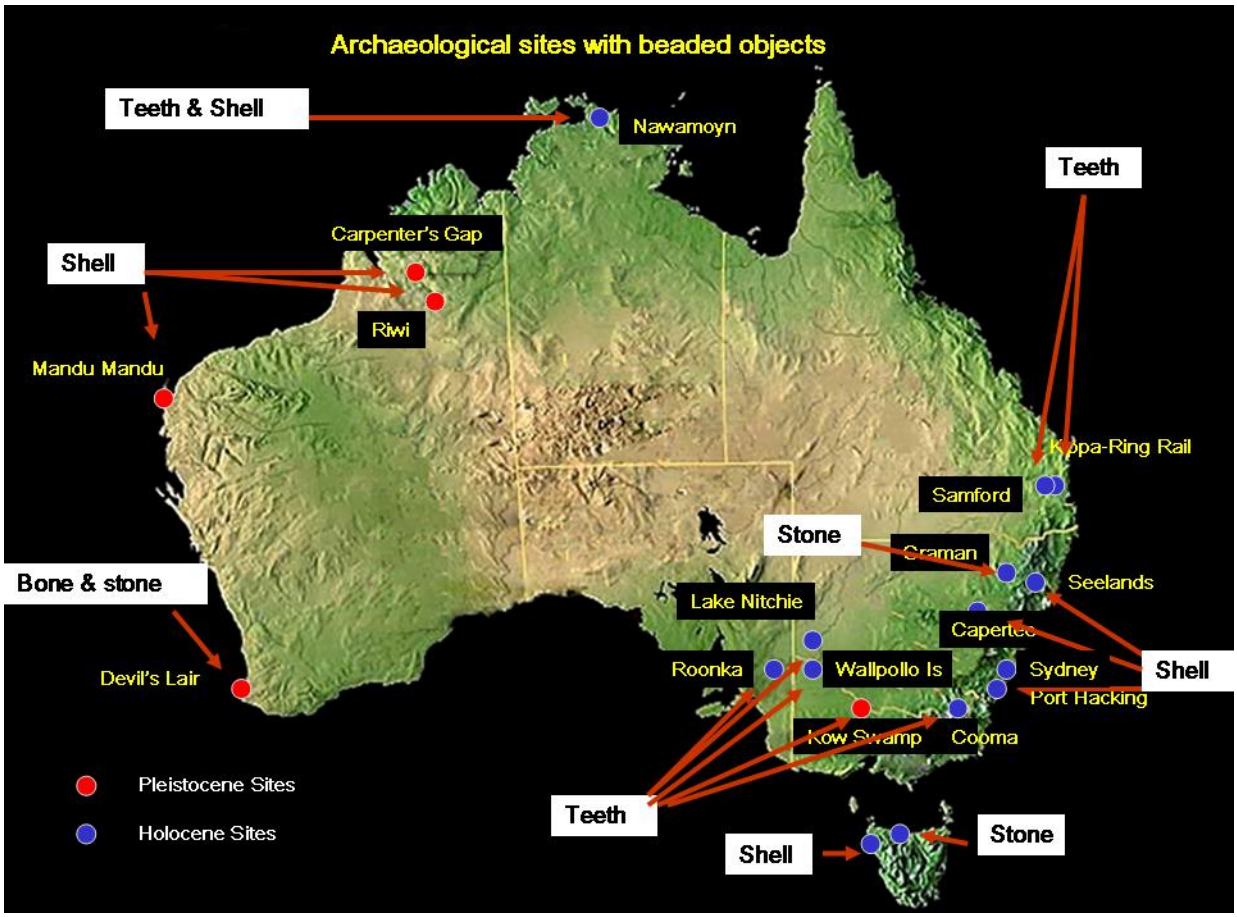

Figure 4.15. Distribution of materials in archaeological sites

Shell ornaments are around the northern, north-western and south-eastern areas of the mainland and in Tasmania. Stone has been recovered from the south-western corner of Western Australia, the eastern coast of the mainland and Tasmania. Teeth were collected from the Murray Darling Rivers area, coastal south eastern Queensland, the northern tip of Northern Territory and the south western corner of Western Australia. If the dating on Kow Swamp is correct, then they are the only teeth found in the Pleistocene. What makes this unique is those teeth were cemented for attaching to string, the other teeth ornaments collected from the same river system have been pierced or notched for stringing.

There is a lack of dated archaeological sites from Central Australia and North Queensland. With the exception of Nawamoyn in the Northern Territory, beads manufactured from teeth are confined to two areas on the eastern side of the continent - in a very small area in south-eastern Queensland (surface finds) and around the Murray watercourse and its headwaters in the Southern Tablelands. Shell is more widespread, and stone and bone lightly distributed

around the southern end of Australia. The evidence from archaeology is meagre although there is additional information from rock art.

4.5 Beads in rock art

Rock art has a long tradition in Australia with archaeological evidence for pigment from Carpenter's Gap in the Kimberley, Western Australia, giving a time depth of around 40,000 year BP (O'Connor and Fankhauser 2001). George Chaloupka (1993: 112) recorded rock art in Arnhem Land that depicts people wearing necklaces and pendants, although in an email communication from him on 28 March 2008, Chaloupka said it was difficult to identify what material the ornaments are manufactured from. Also, there are stencils of shell pendants in Central Queensland and depictions of shell pendants and of people wearing grass strings in Cape York (Cole 2008, pers. comm.). I am aware that caution is needed when interpreting rock art sites and that the depiction may not mean the same thing to Europeans as the artist intended.

4.5.1 Cape York

Noelene Cole recorded pendants in the rock art in the Laura region in Cape York. Only twenty of the 3,500 anthropomorphic motifs had pendants. Of those, the majority were female figures. The pendant, identified in the rock art by Aboriginal people in the area, is represented as an oval shape suspended from a string around the neck. The majority of the pendants are painted in white infill on solid red figures. Nearly half of these paintings are located in one locality (Cole 1998).

Hale and Tindale (1934: 142) recorded the wearing and trading of *Nautilus* sp. and pearl-oyster shell necklaces (often pendants of oval shapes pieces of shell suspended on woven string). Noelene Cole (2008, pers. comm.) was told by an elder of the Kulu Thaypann people that coastal people traded shell with inland people such as Thaypann and that Percy Trezise has recorded figures in Cape York that appear to be love charms in the form of a chest pendant.

4.5.2 Queensland Central Highlands

Stencils in at least five caves in the Central Queensland highlands are believed to be of the baler shell chest pendant *che-kara.* One or two shells have been used at each cave and repeatedly stencilled with red ochre. The object is shown with and without string attached. The stencils have been stratigraphically dated to be no older than about 2,300 years BP and no later than 100 years BP, and believed to be evidence of trade from the north of Australia (Beaton and Walsh 1977). The caves are over 400 kms from the coast. Stencils of objects identified as shell pendants have also been recorded in the Selwyn Ranges (Figure 4.16) in the north-west of Queensland.

Figure 4.16. Stencils of shell pendants from Selwyn Ranges (Qld). Photograph supplied by Prof. I. Davidson.

Stencils of shell pendants are not confined to this area. Stencils of shell pendants appear on the opposite side of the continent in the Kimberley region, Western Australia.

4.5.3 Kimberley region, Western Australia

In the Kimberley region, the art styles range from stencils to the dynamic and elaborately decorated Bradshaw figures, and a more recent form of Wandjina art. The large oval stencil at Grant Range, southern Kimberley, appears to be a pearl shell pendant (Figure 4.17).

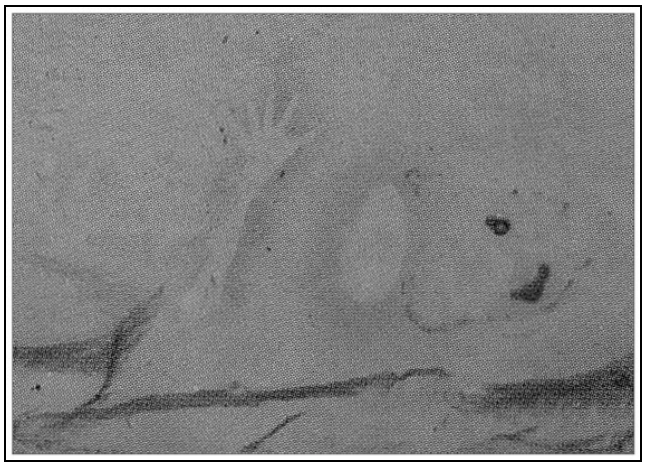

Figure 4.17. Possible stencil of pearl shell pendant from Grant Range, from Akerman & Stanton (1994: 57, Plate 48)

The Bradshaw figures are thought to be of great age (Watchman et al. 1997), with 17,000 year claimed for OSL dating (Roberts et al. 1997). The figures are depicted wearing ornaments (e.g. tassels from the waist and arms), and headdresses and holding weapons. Welch (1996) argues that the material culture shown in the depictions can show a continuous line of use with material culture used in ethnographic times. Three of the forms of material culture displayed in the art are of interest to this study. These include:

- tasselled figures wearing tassels hanging from the head. These may be kangaroo teeth pendants – this type of ornament was worn attached to the hair with gum in the Kimberley area, (Welch 1996: 108);
- the 'bulbous shape in front of bent knee figures may be oval shaped pearl shell phallocrypts which were commonly worn in the Kimberley in ethnographic times and were valuable trade items; and
- some bent knee figures have objects hanging from the neck which end in exaggerated claw shapes. These may be claw pendants made from birds or animals. Roth (1897, Ch. VII, Sect. 182) wrote about talons of eagles being traded in north-western Queensland that were made into pendants.

Of these, the depictions of the animal claws illustrated in Walsh (1994: 200, Plate 57) is most representative of the real object (see Figure 4.18). The ornament hanging under the figure's right arm is not unlike oversized talons or claws.

Figure 4.18. Bradshaw figure with possible claws from Walsh (1994: 200, Plate 57)

In the northern and westerns section of the Kimberley, the distinctive Wandjina figures are often depicted with an oval shape on the chest that is thought to represent the same form of pearl shell pendants that Welch mentioned for the Bradshaw figures (Black 1964: 24; Elkin 1930 : 273-274; 1948: 7, 13; McCarthy 1979: 52). Akerman and Stanton (1994) have published a comprehensive description of the manufacture and use of the large pearl shell pendants. In an email communication, Akerman (2008, pers. comm.) indicated to me that it was impossible to say if the oval shape on the Wandjinas represents a pearl shell pendant. Figure 4.19 shows an example of a Wandjina painting.

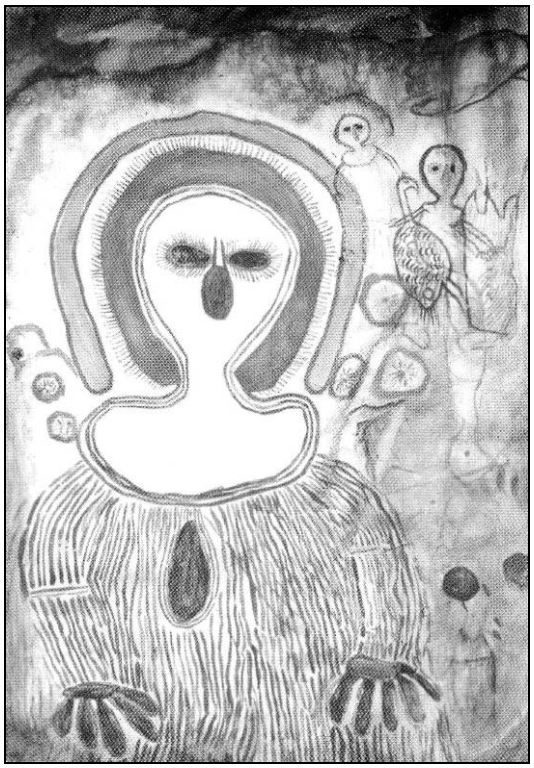

Figure 4.19. Wandjina with oval shape depicted on chest, Kimberley area. From Johnson (2005: 119)

Further to the south along the Western Australian coast, Tindale recorded engravings at Port Hedland. He interpreted one of the motifs he recorded as representing a necklace:

> …made of pieces of shell stuck onto a hair string base using resin. Later, when working with Jammi, a Kurama man from the Hamersley Ranges, far inland, we learned that during secret ceremonies initiated men there often wore necklets made of pieces of pearl shell fastened to a fur string band or to a hair string choker, by being affixed with porcupine grass resin'. (Tindale 1987: 54, Fig. 100)

The shell was traded from the Roebourne area. Akerman (Akerman and Stanton 1994: 51) was, and still is 'hesitant to accept this interpretation' adding that the motif may represent a kangaroo teeth fillet or another form of object (Akerman 2008, pers. comm.). The motif consists of a single wavy line, crossed at intervals with approximately fifteen short lines. Whether it is teeth, shell or another material, the object appears to be a series of segments rather than one individual suspended object.

4.5.4 Arnhem Land, Northern Territory

Arnhem Land is rich in Aboriginal rock art and George Chaloupka has studied the rock art for decades. In an email communication from Chaloupka, he said he has found that:

> …there are many depictions of necklets and pendants in one of the early Arnhem Land plateau rock art styles. Referred to as Dynamic Figures almost every male is found to have something around his neck. I have located paintings of this style at some 550 sites. They are of similar age to Bradshaws. Stencils of two necklets (Fig. 267) and a number of Dynamic Figures appear in my book *Journey in Time*. In the book I have stated that out of 1165 male figures 274 wore some type of a necklace ornament and 22 wore neck pendants. (Chaloupka, G. 2008, pers. comm.)

The stencils referred to in the above quote as 'Fig. 267' are displayed in Figure 4.20.

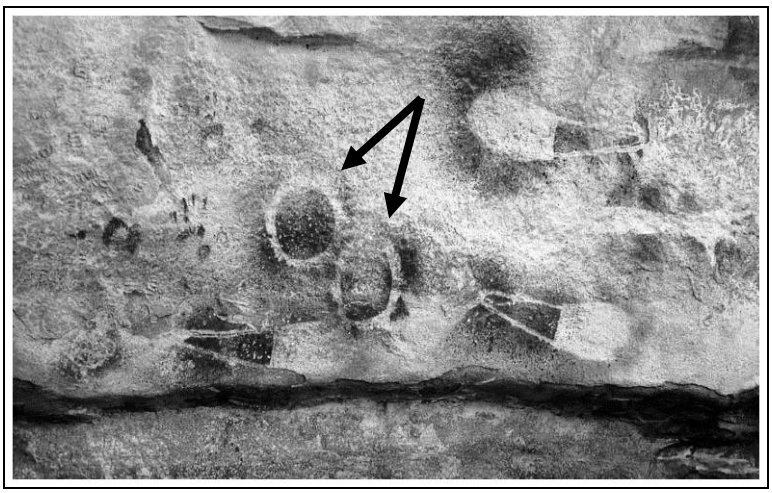

Figure 4.20. Stencils of pendants in Arnhem Land (Chaloupka 1993: 233, Fig. 267)

The stencils look very much like those recorded in Carnarvon Gorge in Queensland that are reported to be baler shell pendants (Beaton and Walsh 1977: 47).

4.5.5 Central Australia

June Ross, who is a recognised authority on the rock art of the Central Desert has seen no evidence of depictions of beads in that art form (Ross, J. 2008, pers. comm.), though there are relatively few representations of people in the Central Desert art.

4.6 Conclusion

From the archaeological evidence, shell ornaments turn up in sites over 30,000 years old. Whereas, ornaments manufactured from teeth have been recovered from possibly late Pleistocene, or certainly by c. 7,000 years BP sites through to more recent times and most of

these are associated with burials. There is variation in the technology used for attaching the teeth to string including piercing, notching and the use of resin. Also, teeth from different species have been used to manufacture beads. Issues to be considered here, not only for shell and teeth, are:

- species availability;
- survival of material; and
- selection of species for the manufacture of ornaments.

While the archaeological evidence shows possible links from the Pleistocene to more recent times, unlike Europe, the sample of beads gathered archaeologically in Australia is too small to make a regional study. On the other hand, there is a large amount of material available from photographs, literature and objects held in ethnographic collections from the early 19th Century on. This is what I am studying.

CHAPTER 5 AUSTRALIAN MATERIAL CULTURE STUDIES

5.1 Introduction

In this Chapter, I will outline previous studies of material culture related to beads in Australia. From the previous chapter, beads recovered from archaeology, although significant, are scarce and large areas of Australia unrepresented. Studies of ethnohistoric literature and ethnographic material can help to fill that gap. The majority of research undertaken on Australian Aboriginal beads has been carried out on materials held in museum collections either in Australia or overseas. This chapter introduces the collections and collectors and the attitudes prevalent during the end of the nineteenth century and early twentieth century. In the following chapter, I will provide early European observations of Aboriginal use of beads from the literature.

5.2 Collectors and collections

Australia was first colonised by Europeans in the late 1700s. After that time, the Aborigines in Australia were displaced and the population depleted from the impact of European settlement. The opportunity existed in the early contact period to learn about hunter/gatherer societies by studying the culture of Australian Aborigines. Early police, explorers, missionaries, doctors, surveyors, pastoralists and many others wrote accounts of their encounters with Aborigines and gathered artefacts, generally by exchange. However, for most collectors, their methods were not scientific and few wrote accounts with an anthropological approach – that is, recording time, place and context of objects.

There is a whole range of beaded objects that were worn by Aboriginal people, but do the museum collections reflect that range? A lot of objects were taken off shore and the collections we have now have resulted from the attitudes of collectors and museum curators at the time. Often collectors went out with an order form to fill (e.g. twenty spears and four

shields) and any contextual information was a bonus (Jones 1996). The presence of missionaries like Reuther and Strehlow encouraged Aborigines to manufacture objects for sale. Not only were there demands for particular objects from overseas and in Australian cities, Aboriginal people were making ornaments for the missions without being requested to.

This was occurring in places other than Australia. Torrence (2000: 131) noted a similar scenario in the Admiralty Islands to the north of Australia. In an analysis of changes in spear and dagger production, she argued that objects in museums collected after 1875 were 'made primarily for sale to traders'. The design and decoration of objects had changed over the years in response to European trade, that is, locals manufacturing for the market context.

Australia lost an enormous number of artefacts to overseas collections. Collection Records held in the Australian Museum and filed under the collector's name, showed objects collected by H. Stockdale (dated January 25, 1894) were sent to the Chicago Museum. Included in the shipment were necklets 'segments of straw (grass stalks) of different lengths and sizes strung on native string and worn as necklace' and incisor teeth of kangaroos mounted as a fillet or necklace (Collection Record, Australian Museum). The bases of the teeth were encased in gum cement, coloured red and held together with string. In 1912, objects collected in Western Australia by J.F. Connelly, including necklets, were also sent to the Chicago Museum (Purchase Order filed in Australian Museum). In another example, the Swedish scientist, Dr Eric Mjöberg took Australian Aboriginal artefacts and human remains from the Kimberley District, Victoria, New South Wales and Queensland back to Sweden. Most of the artefacts are housed in Sweden's Museum of Ethnography (Ferrier 1999: 56, 121). The concept of social Darwinism was present at the time and Mjöberg removed bones from Australia as examples of primitive people (King 2005).

In addition, Aboriginal culture was changing rapidly in response to European impact. In 1924, Horne and Aiston (ethnographers) wrote of the Aborigines in the Lake Eyre District:

> The decorations have been taken in many instances from the white...The time…has gone by for obtaining knowledge of the black's mentality uncontaminated. Many years of contact with the whites have robbed them of the freshness of their native customs. The mission stations, with the best possible motives, have done even worse. (Horne and Aiston 1924: 11)

This attitude prompted a surge of collection activity although the time of European impact was staggered over space. For example, the Sydney area was the first area of colonisation, with Aboriginal people scattered and unable to cope with introduced disease. During those initial colonising years, very little beneficial description of Aboriginal culture was made. Remote areas like Arnhem Land in the Northern Territory, Cape York in northern Queensland and the north-western corner of South Australia were impacted much later. By the relevant time of contact or collection, there was more urgency in recording the cultures of the depleted Aboriginal population.

Some authors (like Walter Roth, Ursula McConnel and Donald Thomson) gave good descriptions of the types of objects, their manufacture and their uses. Also, photographs provide insights into the culture of early Aboriginal people. Some caution is needed when using photographs in a study of this kind because there is good evidence for staged photos. The subjects in the photographs may have been dressed to look traditional and/or may be wearing ornaments that were out of character for their culture, status or sex. Figure 5.1 illustrates a group of naked Aborigines at Port Essington, Northern Territory, waiting outside a tent to be photographed in the 1870s. The photographer, Paul Foelsche, a police inspector, wrote: 'I worked in a tent, 110 [degrees] in the shade, rather too hot for any European to work 10 hours a day in' (Foelsche to J. Lewis, 19 December 1877, PRG 247, State Library of Australia).

Figure 5.1. Paul Foelsche: Iwaidja people waiting to be photographed, Port Essington, November 1877. Permission from Noye Collection Art Gallery of South Australia, Adelaide

The Aborigines were placed in an assembly line waiting their turn to be photographed. In many of Foelsche's photographs, the subjects are portrayed wearing reed necklaces, kangaroo teeth headbands and a sarong type garment around the waist (European cloth). I suspect that the subjects have been 'dressed' with the same objects, taken from one candidate to place on another. A lot of Foelsche's photographs were in response to requests made by Stirling, the Director of the South Australian Museum (Jones 2005).

For this study, I have found Walter Roth provided the most contextual information about the Aboriginal use of beads. Roth was born in England, came to Australia in 1887, then returned to England in 1891 to study medicine. Roth returned to Australia in 1894 and worked as a medical doctor in north-western Queensland. Roth was appointed Protector of Aborigines for the Northern and Central Divisions of the State in 1897 and travelled around the northern Districts of Queensland. During his years in Queensland, Roth visited communities and gathered information and material culture from the Aborigines. He published eighteen

Bulletins on the lifestyle and material culture of Aboriginal people. Unlike many other collectors at the time, he was not as fanatic about collecting 'traditional' materials and saw no problem with objects that incorporated modern material. He eventually sold around 2,000 objects to the Australian Museum in 1905. Kate Khan (1993; 1996; 2003; 2004) has catalogued the Roth collection held in the Australian Museum. The Aboriginal people were of great interest to Roth and he wrote to Baldwin Spencer on more than one occasion about them.

Baldwin Spencer and Frank Gillen are generally accepted as having provided scholarly and accurate accounts of the culture of Australian Aborigines, especially the Aranda people of Central Australia (for this project, I have adopted the spelling of Arrernte from Horton's 1996 map) (Gillen 1968; Mulvaney and Calaby 1985; Spencer 1912; 1914; 1922; 1927; 1928; Spencer and Gillen 1899; 1904). Born in England, Spencer travelled to Australia and became a Professor of Biology at the University of Melbourne. On a trip to Central Australia, Spencer met Gillen in Alice Springs 1894. Gillen worked for the South Australian Telegraph Department and had good knowledge of Aboriginal society. The two teamed up after returning from Stirling's Horn expedition, which concentrated on the Arrernte people in Central Australia. They ventured on many anthropological trips and jointly wrote the book *The Native Tribes of Central Australia* (Spencer and Gillen 1899). The book, among others written by Spencer, provides ethnographical information about the culture and customs of Central Aboriginal people and ceremonies that they claimed 'which until now had not been seen by Europeans' - keeping in mind the influence of social Darwinism on science in those times. The authors commented on the work of Roth in Queensland:

> Mr Roth's work bears more closely upon certain parts of ours than that of any other author does, and is in some respects, the most detailed account yet published of any Australian tribe, and we gladly take this opportunity, as fellow-workers in the same field, of expressing our high appreciation of his work. (Spencer and Gillen 1899: vii, Preface)

Spencer and Gillen collected artefacts, many of which have been stored in Australian Museums, and Spencer's (1919) photographs have captured moments in the lifestyle of the Aboriginal people living in Central Australia. These lines of evidence will be investigated during this study.

Donald Thomson studied Anthropology at Sydney University with Radcliffe-Brown in 1927 before working in Cape York between 1928 and 1932, in Arnhem Land between 1935 and 1943, and the Western Desert 1957, 1963 and 1965 (Peterson 2005: 29). He thought 'Ethnographically, Cape York has long been a neglected field' and commented that Roth had not worked much 'north of a line drawn from the mouth of the Mitchell River on the west, to Princess Charlotte Bay on the east" (Thomson 1933: 454). He disagreed with many of Roth's findings. For example, Roth had seen relationships between totemic performances on Cape York and the 'antics' of animals, and, he disagreed with Roth's observation that initiation dances bore relationship to 'Central Australian totemic performances' – Thomson argued there was not enough evidence (Thomson 1933: 488). I will point out here that Thomson was working some forty years later than Roth. Thomson collected thousands of objects and took almost 11,000 photographs (Allen 2005), most of which are in the Melbourne Museum.

Ursula McConnel, an anthropologist, was born in Queensland and worked in the Cape York area during the late 1920s and early 1930s. She felt her work complemented previous work done on the east coast of the peninsula by Tindale and 'demonstrates Papuan and Torres Straits Island influences upon mainland culture' (McConnel 1953: 1). She placed the artefacts in a social context, describing their function as fitting in with 'a way of life' she thought had 'existed for thousands of years and would still be existing indefinitely if it had not been disturbed' (McConnel 1953: 2). Over 500 of the objects that McConnel collected have survived in the South Australian Museum (Jones 1996: 186).

Other collectors important to this study include:

- Reverend Nicholas, collected objects at Lombadina Mission, in the Kimberley District, Western Australia between 1912 and 1915;
- B. Fletcher collected in the Kimberley region, Western Australia
- The Legge collection, collected in Arnhem Land, Northern Territory, the collection is in the Queen Victoria Museum, Tasmania;
- Archibald Meston (Protector of Aborigines and Commissioner of Police, Queensland) collected from Cape York and Lake Eyre Districts around the same time as Roth. He lacked anthropological training.

- Clement Wragge (meteorologist) collected from the north east coast of Queensland and the hinterland in the 1890s but had been collecting in South Australia in the 1860s. Most of the beads collected by Wragge are in the Queensland Museum.

Other well known collectors (e.g. Norman Tindale) did not collect substantial numbers of artefacts suitable for this study. One hundred and seventy different collectors contributed to my data base and very few of these have provided contextual information that can be useful in a study of ornaments.

5.3 Previous studies of beads in Australia

To my knowledge, there has not been a study undertaken on beads in general in Australia. However, there have been publications concerned with shell ornaments including Mountford and Harvey (1938), Schall (1985) and Akerman (Akerman and Stanton 1994). Akerman (2008 in prep.) is close to publishing about Aboriginal use of stone, bone and shell, which will provide a very informative reference. There has been interest shown in Aboriginal beads but few have made them the focus of their studies. Some authors have included beads as part of the description of material culture in Australia while others have concentrated on particular raw materials of beaded objects.

5.3.1 Davidson, D.S. (1937)

Davidson looked at Aboriginal decoration in Australian Aboriginal art. Included in that study, was a section on pearl shell ornaments, which included an illustration of their distribution and movement (see Figure 3.16).

Davidson (1937: xiii) was more interested in the designs on the shells than their function and commented that 'much of Australian art apparently is primarily aesthetic but other appearances are of profound religious significance'. Davidson claimed the distribution of pearl shells

> For the most part pearl shells are decorated by the coastal tribes and traded inland in a finished condition. In some cases it seems that the finished shells without designs are secured by the nearby tribes of the interior and decorated locally by them…incised shells also are found in the Cape York Peninsula. The specimens are small and of those traded into the interior of Queensland most seem to be worn

> as hair ornaments. Some find their way to Central Australia where they are greatly prized. (Davidson 1937: 63)

Davidson (1938b) had considered the Bronze Age of East India as an origin for the designs in north western Australia. By 1949, Davidson moderated his ideas to 'at first glance' the interlocking key design found on shell pendants in Australia had originated in the Bronze Age and was at the time in New Guinea. However, he did see 'considerable' differences particularly in the lack of uniformity of elements within the designs and variability in design found on baobab nuts, boomerangs, spear-throwers, shields, pearl shells and churingas (Davidson 1949: 85, 86, 90). Davidson concluded that the interlocking key design (Figure 5.2) was restricted to the northern coast of Western Australia (see Figure 5.3).

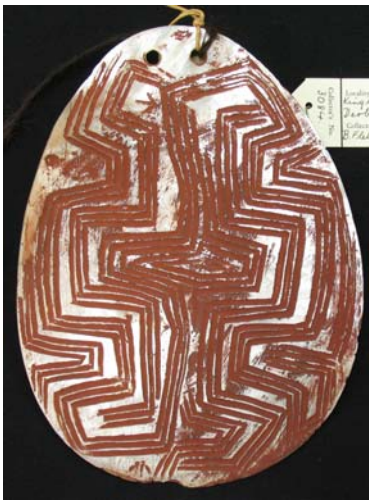

Figure 5.2. Example of interlocking key design

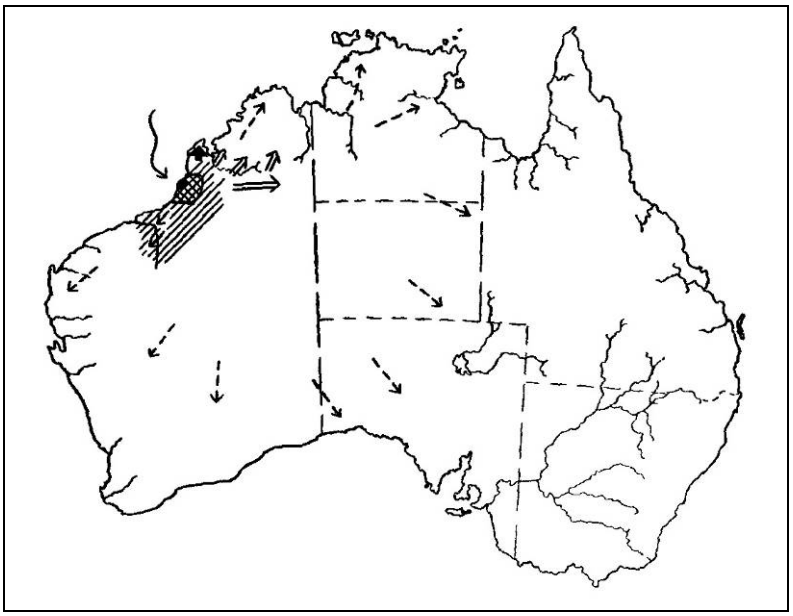

Figure 5.3. Distribution of interlocking key design from Davidson (1949: 91)

Davidson pointed out that the use of the design was restricted to the Karadjeri people and applied to shields and pearl shells, later used on churingas and the design diffused easterly. Davidson felt that if undecorated shells were found in older archaeological sites, followed by completely decorated shells in lower layers, this could mean that the design originated on another material and was transferred to the shells later, possibly through the Indonesian visitors (Davidson 1949: 94, 96). Davidson was trying to make histories based on diffusion of material culture.

5.3.2 Mountford, C.P. and Harvey, A. (1938)

In their study of shell ornaments, Mountford and Harvey (1938) examined ethnohistoric literature and ethnographic material to plot the distribution of ornaments, describe their manufacture and outline their function. The authors looked at pendants only in that study. They found two main shell ornament types – one manufactured from baler shell and the other from pearl oyster shell (*Meleagrina maxima* and *Meleagrina margaritifera*) (named by Mountford & Harvey 1938: 115). The distribution of shells is shown in Figure 5.4.

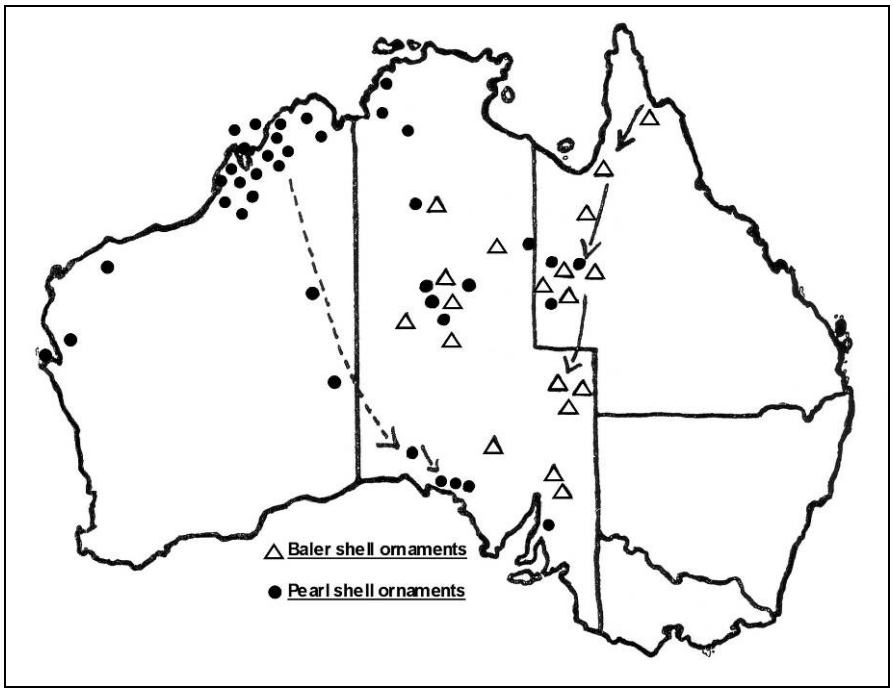

Figure 5.4. Distribution of baler and pearl shell ornaments from Mountford & Harvey (1938: 116)

Figure 5.4 shows the shell ornaments were distributed across Australia*:*

- almost all pearl shell ornaments in the western half of the Australian mainland; and
- baler shell ornaments in Queensland, north eastern South Australia and Western Central Australia (Mountford and Harvey 1938: 115).

Mountford and Harvey wrote that the shell ornaments appeared to have more than one function within an area. They noted the shell ornaments of south western Queensland were used by some as a pubic ornament in ceremonies and, by others, for 'evil magic' (Mountford and Harvey 1938: 116). Vanhaeren has pointed out the multi-functionalism of ornaments (2005: 525) in her ethnographic study.

The distribution of plain and engraved baler shells on Figure 5.5 shows engraved shells are confined to a small area in the Northern Territory.

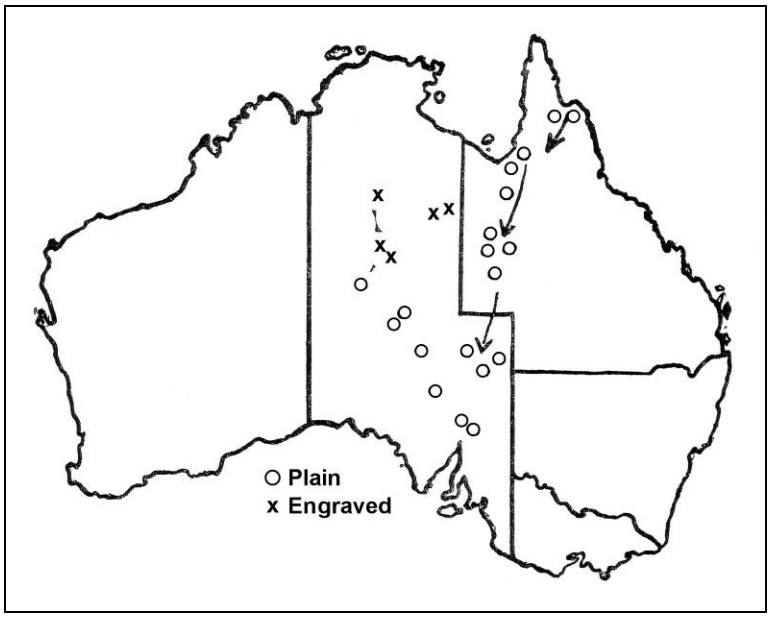

Figure 5.5. Distribution of plain and engraved baler shell (Mountford and Harvey 1938: 129)

The authors saw two main design patterns for engraved shells – geometric and naturalistic. The geometric designs were subdivided further into four patterns:

a. angular meander or maze design;
b. meandering or zig-zag lines;
c. lattice and ladder designs; and
d. parallel lines and stars.

These design patterns are illustrated in Figure 5.6 and the locations the designs were recorded by Mountford in Table 5.1.

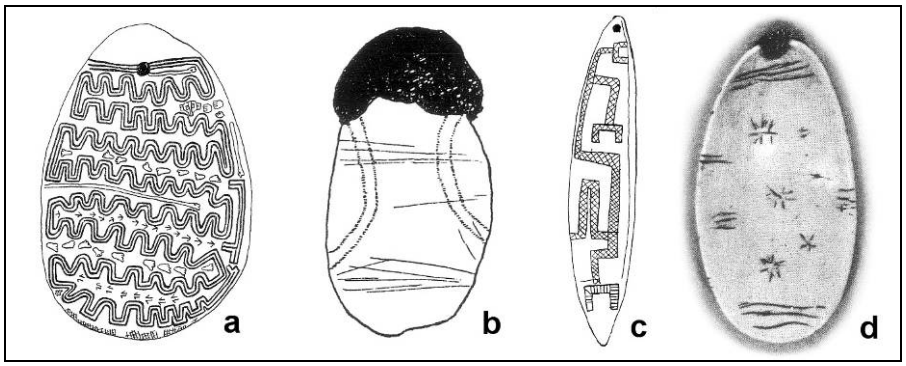

Figure 5.6. Geometric design patterns according to Mountford & Harvey (1938: 129-130)

Table 5.1. Distribution of geometric designs on pearl shells

Design pattern	Location of sample	Distribution of design
Geometric a	Sunday Island, W.A.	Originated north west coast WA. Examples found: Canning Stock Route, WA; Barrow Creek, Central Australia; Warburton Range, WA
Geometric b	Cooper Creek, S.A.	Far north west coast WA. Examples found: Central Australia; the Great Australian Bight.
Geometric c	North west coast, W.A	North west coast WA. Examples found Katherine River, NT; the Great Australian Bight
Geometric d	Central Australia	Confined to Central Australia, may be baler or pearl shell
Naturalistic	n/a	North west coast WA. One example from south western NT

From their comparison of designs on pearl shells and tjurungas from Central Australia, Mountford and Harvey (1938: 132) argued that the 'art of the pearl shell ornament is confined to the north'. An exception to this was the parallel lines and star motif confined to Central Australia and found on baler and pearl shell ornaments. Designs on shells found in Central Australia often exhibit the design for the 'Centre' area superimposed over a design from the 'north' area. On that basis, it could be assumed that these objects must be incised before being traded inland.

An important point that Mountford and Harvey make in this study, is that the function of the shells change over distance away from the source. Earlier, I noted that McBryde had written that objects gained in value further from the source with repeated exchange. As an example, manufacture of the baler shell ornaments was restricted to Cape York and had a utilitarian purpose (e.g. as well as ornamental). As the objects travel further from their source, their function changed and then became more valuable as ornaments. At their most distant points from the source, the objects gain more value as ceremonial or magical objects, and factors in initiation rituals. Replacement objects made of material such as chinaware have been copied for use as ornaments in the Boulia District (Roth 1897, Ch. VII, Sect. 182). Other replacement materials for pearl and baler shell pendants include bone, kaolin and fruit tin lids (Mountford and Harvey 1938: 132).

Mountford and Harvey found that the function of ornaments differed within and between regions across the continent. For example, they noted that Martin and Panter (1964: 86) considered the large pearl shell pendants as ornamental for coastal north western tribes. On Sunday Island, just off the north western coast, in the early 1900s, the geologist, Campbell,

saw the same pendants worn as status markers by young men to show they were in their final initiation stages. Whether this was a change of function over time rather than space is not discussed. At Ooldea, in southern South Australia, scrapings of the pearl shell pendant was used in rain-making ceremonies, resulting in smaller specimens in that area (Mountford and Harvey 1938: 123).

From Mountford and Harvey's conclusions, I should find variation of function, design and size over space in shell pendants and the objects should gain in value with distance from the source. Baler and pearl shell are known trade items, but will the same occur for other types of suspended objects? Mountford and Harvey's study was limited to two species of shell pendants and appears to have no time parameters. My study will look at all objects that can be classified as a beaded ornament. I expect to find some differences in objects intended for local use compared with those intended for trade (e.g. more standardisation for trade).

5.3.3 Schall (1985)

Alexandra Schall (1985: 85-88) investigated the regional variation in shell species and Aboriginal use in the Cape York area. Schall's sample included the Donald Thomson Collection at the Museum of Victoria and the W.E. Roth Collection at the Australian Museum. The purpose of the work was to produce a catalogue that informed on shell species, their distribution and use within Cape York. Schall drew on ethnographic literature to describe the manufacture, distribution and function of the shells. The result was a thorough description of the objects in the sample and their spread across Cape York. Schall defined four cultural areas and discussed the objects in relation to those areas (e.g. trade, manufacture and use). She found the following distribution for necklaces and necklets:

- *Nautilus* sp. and pearl oyster shell were most commonly used to manufacture necklets.
- most *Nautilus* sp. shell was collect from the east coast and most pearl shell from the west coast.
- Necklaces were most commonly manufactured from *Oliva* sp. (olive shells) and were collected from west coast of Cape York.
- the wearing and function of necklaces and necklets varied between groups and gender. Generally, men wore them across the forehead and women around the neck.
- objects that were restricted to the eastern regions of Cape York:
    - *Nautilus* sp. breast pendants, necklets with overlapping shell; and

  - *Nautilus* sp. necklets with very large oval shell segments.
- objects that were restricted to the Gulf region:
  - baler shell breast pendants; and
  - necklets consisting of larger, oval, pearl shell segments.
- objects found throughout the coastal regions of Cape York:
  - pearl shell breast pendants; and
  - necklets made from small rectangular segments of pearl or *Nautilus* sp. strung side by side.
- objects restricted to northern regions of Cape York:
  - cone shell breast pendants.

Her conclusions include:

- cone shell was probably traded down from New Guinea through Torres Strait and there was a greater influence on northern regions of the Cape from Torres Strait (Haddon 1904: 293-297; 1908: 185-188; Moore 1979: 301; Schall 1985: 87).
- pearl shell distribution around all coastal regions probably reflected that the nacreous surface made it desirable for manufacturing pendants.
- baler shell was less sought after and therefore distribution was limited to the lower Gulf region.
- distribution of *Nautilus* sp. objects was due to environmental causes as this deep water species was more available on the east coast.
- pearl and *Nautilus* sp. necklets were similar to Torres Strait Islands and there may have been some influence of ideas from Torres Strait Islands in the past.

Schall also felt the sample may not have been representative of shells used by Aborigines in Cape York due to collection practices and that further investigation would prove that a wider range of shell species was used by Aborigines.

Schall's sample included shell objects only and limited to two collectors and two museums. My sample will include all objects in the major Australian museums and will add to Schall's work. Other research that has concentrated on shells but in a broader area has been undertaken by Kim Akerman.

5.3.4 Akerman, K.

Kim Akerman has been studying and manufacturing Aboriginal artefacts in Australia for more than thirty years. Akerman and John Stanton published a Monograph in 1994 that describes engravings on pearl shells and gives a comprehensive outline of the manufacture, use, and distribution on the pearl shell ornaments from north-western Australia. Akerman wrote the text and Stanton prepared plates and assembled the book, therefore I will refer to Akerman when discussing the text content of the Monograph. Akerman (Akerman and Stanton 1994: xi) thought that the focus of 'scholarly attention' had been on the distribution of pearl shell ornaments in relation to trade routes and ceremonial aspects. The intention of the monograph was to draw on the literature and Kim Akerman's then twenty years of observing Aboriginal people in the north western coast of Australia to provide a 'holistic' approach to the study of the shells from the area.

As part of the study, the designs engraved on the shells were investigated in a 'socio-cultural context'. Akerman points out that the shells are all secular but the objects themselves may be incidental to, or central to, secret-sacred activities. The meanings and significance of designs on shells varied between areas and from 'one situation to another'**.** From his examination of designs of over 800 engraved shells Akerman (Akerman and Stanton 1994) determined the following:

- engravings on the shells were probably post-European. There have been no engraved shells recovered archaeologically (Akerman and Stanton 1994: 7);
- the key pattern is incised onto the shell in association with a chant and only by men of the Karadjeri tribe at La Grange, north western Australia. The chant transfers meaning to the design and power to the object (Akerman and Stanton 1994: 7);
- the designs on shells are emphasised by infilling with fat mixed with red ochre or charcoal (Akerman and Stanton 1994: 10);
- shells may have new designs added by scraping off the original (Akerman and Stanton 1994: 10);
- engravings appear restricted to the north west coast of Australia prior to the end of the 19th Century but not in later times (Akerman and Stanton 1994: 10, 15); and
- many shell objects were carved by 'recognizable individuals' (Akerman and Stanton 1994: 14).

Akerman explained that the function of engraved shells have changed since Elkin noted plain shells were for fully initiated men and engraved shells for an earlier phase of initiation in 1936. In 1950, Worms (in Akerman and Stanton 1994: 19) pointed out the engraved shells were emblems of senior men and younger men wore plain shell. Akerman has observed that this is what occurred in contemporary times and that there appears to have been a 'restructuring' of the role of plain and engraved shells.

Mountford's classification of geometric designs was modified by Akerman and subdivisions added to the figurative (naturalistic) style. Akerman was dealing with over 800 engraved items with no time constraints for collection, and it is unlikely that my sample will contain enough engraved pendants to justify as many categories.

Akerman points out that Aboriginal people associated the pearl shell with water, Rainbow Serpent mythology, rain or lightning and well being. He refers to Morphy's (1989: 39) study of the Yolngu people in Arnhem Land, where 'shimmering' qualities in shells and other features were culturally significant to the Yolngu people, who believed this attribute linked them to ancestral power (Akerman and Stanton 1994: 19, 22). This is not the first time authors have mentioned the desirability of the shiny, or nacreous look of shells. White (2007: 299) has argued that materials 'used to communicate social value and identity…share a common character: visual and tactile lustre' and not chosen just because they are available.

One of the uses of pearl shell objects was simply for adornment. In the Kimberley and desert areas of Western Australia both men and women wore smaller 'blades, discs and crescents' for informal occasions. The larger were for more formal use. They were also used for rain making, charms, magic and sorcery (Akerman and Stanton 1994: 22-32).

With regard to distribution, Akerman ascertained the following traits should be distributed:

- shells with more than one perforation were generally found in the Western Desert (Akerman and Stanton 1994: 4); and

- the eastern extent of distribution of pearl shells coincides with the circumcision line. This may be linked with groups who give initiates pearl shells as badges of status (Akerman and Stanton 1994: 17). See Figure 5.7 for distribution of circumcision and subincision.

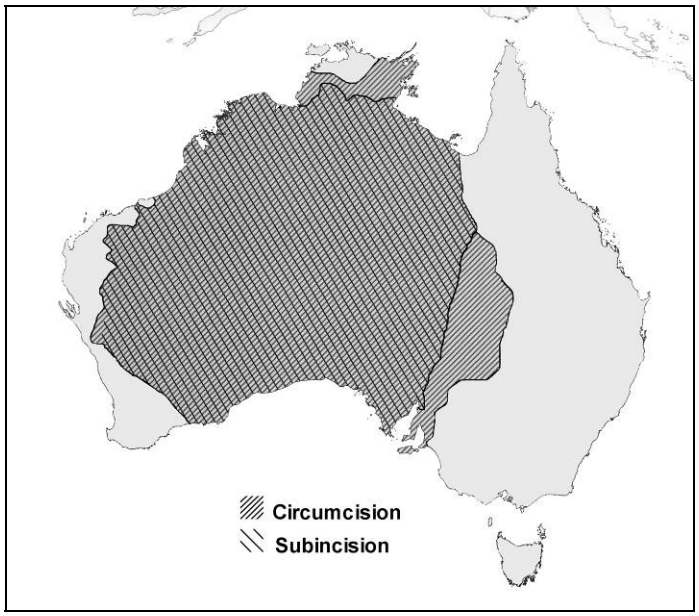

Figure 5.7. Circumcision, subincision boundaries (from Peterson et al 2005: 98)

The distribution of pearl shell pendants in relation to circumcision and subincision boundaries will be addressed in my analysis. Akerman and Stanton's Monograph has been an important source for pearl shells from north-western Australia.

Akerman (1973b) also published on the movement of baler shells from Cape York to Wiluna in Western Australia. Akerman established there was a baler shell ornament industry at Wiluna and Leonora in Western Australia, based on information from an old man there. At Leonora, Akerman observed a man engraving a baler shell that had originated in Port Hedland, on the Western Australian coast, travelling via the Pilbara District.

More on baler shell objects was written by Akerman in 1975. In that article, Akerman described the use of baler shell as implements and their distribution in that form not only along the north-western coast, but inland at the Fitzroy River and along the northern edge of the Great Sandy Desert. Akerman (1975: 18) stressed that he did not see baler shell in the

form of an ornament or perforated in that area and found it 'intriguing to speculate why baler shell was not used in the Kimberley for ornament or ritual'.

Of importance to this work, Akerman has provided traits that can be tested. For example, does the eastern extent of pearl shells coincide with the eastern boundary of the circumcision line?

5.4 Previous studies of variation in other material culture in Australia

In a broader sense, there have been authors who have examined the stylistic variation of Australian Aboriginal material culture (not specifically beads) and given explanations for patterning. Some of these studies have concentrated on ethnographic material held in museums, two of which are evaluated in this section. I have not included my own study on boomerangs (McAdam 2001) in this chapter, but see Section 3.5.

5.4.1 McCarthy, F.D.

McCarthy (1940) offered six factors that could cause variation in traits of material culture across Australia. These were:

- **Availability of material**. McCarthy thought that:

  > …ornaments form an excellent example of the influence of local materials. In the coastal area shells, fish spines and vertebrae are most commonly used, and in the interior feathers, twine, animal teeth and fur. The form of many ornaments is due to cultural inheritance and introduced ideas. (McCarthy 1940: 246)

- **Lack of knowledge of the manufacturing process**. McCarthy pointed out the when raw materials was not available for the manufacture of ornaments then the raw material, or the complete or incomplete object could be obtained by: 1) trade: 2) substituted with another material; or 3) dispensed with. If the material was available to a group but not used, then it was probably because members of the group did not have the technical knowledge of the manufacture process (McCarthy 1940: 246).
- **Local elaboration of a universal trait**. McCarthy (1940: 246-247) thought it common within a 'primitive culture' that local groups would stylise the standard form.

- **Individual design by the craftsmen**. McCarthy (1940: 248) noted 'Distributional evidence indicates that the ideas introduced by individual workmen have been a most potent cause of variation in all other phases of the material culture'.
- **Substitution**. Objects could be modified locally to serve a different purpose. As an example, McCarthy (1940: 248-249) described the enlarged proximal end of a spear thrower for use as a paddle.
- **Trade and diffusion**. McCarthy (1940: 250) held onto Davidson's ideas of diffusion (Section 3.4). Styles of objects and technology were passed or diffused along trade routes, at times modifying or replacing other traits:

> In Australia, from north to south, north-eastward to south-westward, north-west to east and south-east, there is a succession of techniques separated spatially only by the length of time each has been diffusing, a process which has produced a striking dissimilarity in the material culture of neighbouring and widely separated areas.

McCarthy offered substantial explanations for variation in traits over space but he did not concentrate on beads in particular. The all-encompassing reasons for variation included both environmental and social factors. This is supported by more recent studies of stylistic distribution of material culture undertaken in 1999 by Best.

5.4.2 Best 1999

Anne Best (1999) looked at six categories of material culture from Queensland held in museums in an archaeological context. Best included rock art, photographs and literature in her study. Best's analysis included bags, boomerangs, message sticks, shields, spears and spear throwers and concluded that the distribution of categories was not uniform, and environmental and social factors contributed to the distribution. She found that ceremonial and male objects were the most regionally bounded objects. Female goods and exotic, long distance trade goods were less bounded. She wrote:

> From this, I propose that the transmission of language-group, clan or individual identity through specific objects and their decorations underlies the spatial restriction of certain styles of ceremonial objects. The expression of male status as holders of restricted knowledge is signalled through certain objects. (Best 1999: 308)

Best proposed that Australian social systems were 'open' despite environmental conditions. She considered the 'bounded' nature of male objects could be considered the only

representative of a 'closed' system in her sample. In his review of Best's publication from her thesis (Best 2003), Simon Holdaway (2004: 86)wrote 'Best provides a remarkably convincing case for the existence of stylistic regional division when nonutilitarian artefacts are considered from a limited time period'. Best's sample was made up of six different classes of objects that could be seen as predominantly male and not representative of the whole population. Also, her sample consisted of objects collected in Queensland only, although she recorded the objects in Museums in Queensland, New South Wales and Great Britain. My study will be broader and involve only one class of material culture – beaded ornaments.

5.4.3 Ferrier 1999

Åda Ferrier examined a range of material culture held in European Museums that was collected from the rainforest in North Queensland by Eric Mjöberg. Mjöberg's main contribution to Australia was his systematic study of the people from the rainforest in north-eastern Queensland in 1913. Ferrier identified five categories in the sample: hunting and fishing tools; utilitarian items; ceremonial, ritual and magic items; miscellaneous items; and stone tools. The sample did not include beads.

Ferrier pointed out:

> Mjöberg was informed that the rainforest region was divided up into hunting grounds occupied by different groups and defined by various easily recognisable landmarks (Mjöberg 1925b: 4). This division of the rainforest region is to some extent reflected in the variability of material culture across the rainforest region. (Ferrier 1999: 94-95)

Ferrier (1999: 94) investigated the relationship between ethnography and archaeology. From a comparison of her results with literature written by Lumholtz (1908) and Roth, she identified 'some variability in material culture across the rainforest region'. Ferrier found the material culture variability coincided with spatial division according to different groups - those divisions had been shown to Mjöberg by the Aborigines at the time he was collecting.

Ferrier argued the variation was due in part to people exploiting different raw materials in different environments but within certain dialect boundaries. Ferrier's sample was collected in a very small area yet she noted there was spatial variation and it was affected by ethnic groups and natural markers or boundaries.

Neither Ferrier nor Best included ornaments of interest to this study in their sample but their findings are relevant because they were based on stylistic differences of ethnographic material. These studies argue for both environmental and social factors as causes for stylistic differences and similarities.

5.5 Conclusion

A number of questions have developed from this and the previous two chapters. They are related to: geographic patterning of similarities/differences in beads, the scale of value of objects within local areas and over long distances, the flow of traits, the degree of design on objects, and association between exchange routes and standardisation of traits. Added to that, is the role of collectors when examining the distribution of beads. Authors have shown interest in distribution of pearl shell and *Melo* sp. pendant ornaments but very little attention has been awarded to beads that have been strung together such as a shell necklace. Schall (1985) has described a range of strings (series) of beaded shells in Cape York. This could mean that I will find more series in Cape York whereas a higher percentage of pendants will be found inland and in the western States of Australia. This has implications for the role of trade in the distribution of pendants and/or strings of beads in Australia.

Previous substantial studies on Aboriginal beads in Australia are scarce. Some materials have been examined in detail within one area, or one form of object over a large area. There are huge areas of Australia that have not been studied. There has been a concentration on shells with a focus on the pearl shell pendants from Western Australia and baler shell ornaments from Cape York. Both items are recognised valuable exchange goods. With the exception of Akerman (in prep.), very little interest has been shown in other materials.

Material other than shell has been recovered archaeologically. The archaeological evidence for beads in Australia is poor both in numbers and in material species, with gaps of thousands of years between dates from one side of the continent to the other. The beaded objects collected during the years of early contact between whites and Aborigines and ethnohistoric literature are other avenues of evidence for investigating the use of ornaments. Early writings by contemporary Europeans for the Aboriginal use of beads will be investigated in the following chapter.