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Research Focus and Conceptual Guidance

What has been so revealing about this turn to 'material culture' is that material culture is often now taken to be inseparable from the immaterial, and, quite powerfully, so much of this 'material culture' is intimately bound up with all sorts of social and cultural phenomena, such as ... gender, power relations, exchange, colonialism, tourism, and more. (Conkey 2001:272)

In this introduction, it is acknowledged that the persistence of the use of the word 'art' and the modern inheritance embedded within the term is problematic. Conkey (1997:413, 2001:270), amongst others, draws attention to the fundamental differences in regard to the role of art in Indigenous and western societies. The deeply entrenched view of art, and by extension rock art, as being an artefact quite distinct from its more mundane archaeological counterparts, such as stones and bones, requires consideration. In this regard, Tomášková (1997:268) remarks:

The nineteenth century understanding of creativity as a special separate practice that only few endowed individuals engaged in, separate from profane unimaginative skilled work, remains with us to this day, and has deeply affected our investigation of prehistoric symbolic activities that we label art.

Soffer and Conkey (1997:2–3) refer to two problems with the use of the term: on the one hand, it implies an aesthetic function which should not be assumed; and, on the other, art is 'transcendent and therefore provides us with transcendent values', which limit the nature of our enquiry.

Conkey (2001:272) points out that in recent material culture studies, the inclusion of items of form and media that do not readily conform to notions of art has led to the recognition that material culture is often inseparable from the immaterial (e.g. see also Miller 2005a, 2005b). Conkey (2001:285) remarks in this regard:

the material and visual culture of some hunter-gatherers is just as much about the core cultural and social concepts of everything from daily life and gender relations to overarching understandings of how the world came to be, as they are about object shape, form aesthetics, colour, or utilitarian function. These latter are the usual categories that we think of, perhaps, when faced with trying to study what we call 'art', but it is both more complex and richer than this.

Conkey (2001:272) therefore argues that if we were to consider art as material culture, then questions relating to the ways in which art works would become more central to our line of enquiry.

In Australia, we have abundant ethnographic evidence that indicates that rock art is produced in a variety of social contexts, and we know that the motives behind its production can be extremely varied (Taçon 2002:124). Layton (2000a:172) emphasises that art can express more than one core theme in a local culture, and that this possibility deserves consideration in the interpretation of rock art. Some ethnography indicates rock art was produced within a ritual

context. Although this evidence is rare (cf. Ross & Davidson 2006:307), Layton (1992) refers to abundant examples from the ethnographic literature of ritual, particularly associated with increase ceremonies, occurring in rock art sites and with reference to specific imagery. The ethnography also reveals many examples of the production of art for religious purposes (Morphy 1999) and in secular contexts for a variety of motivations, many of which are individually inspired, such as those that are commemorative of personal events, hunting and gathering, and the practice of sorcery (Lewis & Rose 1988:47; Layton 1992; Taçon 1994:123; Rosenfeld 1997:296). Rosenfeld (1997:296) remarks that ‘rock art can be variously an ancestral creation, a human creation about the dreaming or a human creation about human concerns’. Furthermore, not all rock art is equivalent in its behavioural expression (Rosenfeld 1997:291, 297, 1999).

A fundamental premise underpinning this research is the recognition that a regional body of rock art may possess such diversity of themes and behavioural signatures. It also raises serious questions in regard to the epistemological appropriateness of inclusive interpretative umbrellas (cf. Conkey 1997:419). Tomášková (1997:268) argues that the preconceptions that come with the term ‘art’ leave ‘only a narrow corridor for interpretation’. The notion of context in this regard is also problematic for it is here that the modern inheritance presents its gravest limitations for rock art analysis. Tomášková refers to the ‘investigation of context in art history which involves two clear poles of production and consumption (the artist and the audience) *that remain uncertain in prehistoric settings*’ (1997:269, my emphasis). It is now clear that it is not possible to generalise about the purpose of imagery production in hunter-gather societies. Conkey (2001:277) remarks:

We cannot say, for example, that hunter-gatherers made art primarily for ritual purposes related to the food quest, or that they engaged in making art in order to negotiate identity. Both these ‘reasons’ for art might have been at work in some places, at some times, and according to some people’s perspectives, but we have to enquire into each differing context to approach the ‘whys’.

In regard to rock art as a category in analyses, a shift has occurred away from attending to its visual and/or formal properties alone, and as the basic analytical unit, towards a greater consideration of its deeper materiality and what this may imply (e.g. Ouzman 2001; Rainbird 2002; Wilson & David 2002). Closely tied in with these considerations of the materiality of rock art is a growing concern with its physical, locational and archaeological context (Rosenfeld 2002; Taçon 2002). In order to expand the interpretive potential of rock art, enquiry is moving well ‘beyond art’ (cf. Conkey 1997:361). However, what ties all these recent threads together is a conceptual emphasis on image-making as cultural practice—a regard for human agency as well as the agential properties of material culture itself—in attempts to infer how rock art functioned meaningfully.

The theoretical and conceptual approach used to guide this research has been discussed in Chapter 1. In this chapter, the first section considers briefly the historical background of rock art research in Australia and specifically the approaches and results of work conducted in the Sydney Basin. The rock art of the Upper Nepean catchment has not been subject to any prior detailed or systematic analysis. However, two previous studies have included a selection of sites from the area. These studies provide information in regard to general archaeological patterns (Sefton 1988; McDonald 1994, 2008a). Thirty-one art sites from the Upper Nepean were included in McDonald’s (1994) regional rock art analysis, and a substantial number from areas further north on the Woronora Plateau. Sefton’s (1988) work included the sites in the Cataract River catchment, which forms the northern area of the Upper Nepean. Officer’s (1984) analysis of rock art in the Georges River catchment is also described.

Next, a review is presented of the anthropological understanding of the role of art in Aboriginal Australia, with reference in particular to the work of Layton (1992; 2000a) and Morphy (1999). Layton’s comprehensive overview of rock art in Australia, from both an ethnographic

and archaeological perspective, provides particular insight into the pitfalls of transposing generalisations and analogies from one region to the next, and both scholars clearly explain the many limitations faced by archaeologists who seek to interpret rock art in the absence of an informing context. Cautiously, Layton and Morphy offer avenues of enquiry for the development of hypotheses about how art encodes meaning, and its functional purpose, which may not exceed what is empirically viable. Both Layton and Morphy consider the analysis of context to be central to a valid archaeological approach to rock art, and, in this regard, Layton (2000a) specifically addresses the relevance of attending to how and where rock art is distributed in the landscape arguing that, from an Indigenous perspective, location also provides interpretive clues in regard to meaning.

While geographic distribution and environmental location, and also the micro-topographic situation (where it is placed within rock shelters), of rock art (including different types) can be defined at a high level of spatial resolution, and on the face of it may appear to be objective data (which is not necessarily perceived to be a good thing, e.g. see Bradley 1991:77; Ingold 1993:153; Thomas 2008), its interpretation from a landscape perspective can be highly subjective to the point of being arbitrary (cf. Brück 2005). As noted above, reconstructing context in rock art research, which is traditionally the bread and butter of archaeology (Meskell 2005a:2), is neither straightforward nor without its pitfalls and limitations. Original conceptions of landscape, as proposed and applied archaeologically by Tilley (1994:7–11) and others, reject the concept that landscape is neutral space onto which human activities can be mapped and instead view landscape ‘as something we travel through and in; it is a participation that articulates the experience of life’ (David 1999:295). ‘These insights have inspired novel ways of engaging with the material remains of the past’ that attend to notions of the embodied experience of landscape (and monuments and artefacts) and which, methodologically, are often based on the archaeologist’s own embodied experience and interpretation of place (Brück 2005:47, 54, 56). Notwithstanding the many critiques relating to the philosophy and substantive issues that have been raised (many of which are summarised in Brück 2005), it is concepts relating to experience and embodiment that are drawn upon in this research for the purposes of examining the distribution, location and context of rock art in the Upper Nepean catchment.

4.1 Archaeological Approaches to Rock Art in Australia

One of the most important and influential papers in early Australian rock art research is Macintosh’s (1977) reappraisal of Beswick Creek cave. In this paper, he shows that the meaning of Aboriginal rock art could not successfully be determined in the absence of appropriate and knowledgeable informants (Macintosh 1977:197). Macintosh reports that, even at the fundamental level of species identification, figurative motifs, which he had identified with confidence, were actually incorrect according to his Aboriginal informants. Australian archaeologists have since eschewed a search for meaning in rock art *per se*, considering such a goal as intractable, and have instead concentrated on the analysis of visual form, distribution and context (cf. Layton 1992:2; Rosenfeld 1992:1).

Prior to the publication of Macintosh’s papers, several quantitative analyses, which sought patterns in motif distribution, had been undertaken (cf. Maynard 1977:387). This approach was recognised as methodologically important and Maynard (1977:387) proposes a comprehensive and standardised classification scheme to facilitate quantitative analysis. The issue of classification was a research theme subsequently developed further by Officer (1984, 1991, 1994), as discussed below.

McMah’s (1965) analysis of engraved art in the Sydney Basin set the stage for a purely archaeological approach to rock art analysis in Australia. McMaha (1965:7) looked at 285 open context engraved rock art sites with the aim to produce a typology and examine spatial variability

and distribution. The quantitative study indicates significant differences in subject representation and form between the northern (around the Upper Hawkesbury) and southern extremes (south of Botany Bay) of the region, and between the inland and coastal areas. The area situated south of Botany Bay was also differentiated by lower site density. McMahan (1965:75) argues that these differences may be ascribed to cultural causes, except for those which relate obviously to the stimulus of different environments.

Since McMahan's seminal study, archaeological approaches to rock art in Australia have been rigorously objective in the manner in which the material has been handled, and a strong tradition of formal analysis, quantification and analysis of spatial distribution has become central to the discipline. Since the 1970s, the use of archaeological approaches (Morwood & Smith 1994:20) has been vibrant, resulting in a large and rich corpus of theoretical and substantive work. Studies have generally been closely allied to mainstream archaeological objectives, and this in part is reflected in the research questions that have been addressed and approaches adopted. In seminal projects, Rosenfeld (1975) and Morwood (1980) explicitly explored the relationship between rock art and changes in excavated archaeological materials. Others have since adopted this integrated approach (e.g. David 1991; McDonald 1994, 2008a). Excavations conducted as a component of rock art investigations have provided some researchers a direct means of dating rock art when panels are found buried by habitation deposit (Rosenfeld 1975:37; McDonald 1994), and an archaeological context in which to situate and infer temporal and spatial ordering in rock art (e.g. Morwood 1980; McDonald 1994, 2008a).

Arguably, the dominant theoretical and explanatory approach used in rock art studies during the 1980s and early 1990s—information exchange theory—likewise has been adopted in accordance with the 'central paradigm of Australian prehistory which focused on adaptive strategies of hunter-gatherer populations in a range of highly contrastive environments' (Rosenfeld 1992:3). Within this interpretive framework, rock art styles have been identified and their inherent spatial variability set out within a chronological framework whereby different styles are equated with different periods of time. Style has been viewed as functioning within a process of information exchange, which is conceived as a cultural mechanism for establishing social links and boundaries that confer an adaptive advantage in determining access to resources within synchronic contexts (Rosenfeld 1992:3). For example, a widespread geographic distribution of a rock art style is viewed as reflecting open networks of communication, which function socially to facilitate access to resources, while restricted distributions of rock art styles are seen to reflect boundedness, and closures of communication networks, usually in response to ameliorated climatic and environmental conditions, and often conceptualised as reflecting population increase (cf. Rosenfeld 1992:3; and see e.g. Morwood 1984; Lewis 1988; David & Cole 1990; McDonald 1994). In these studies, the concept of meaning was reinstated as a central issue, not as a search for explicit meaning, but 'rather by integrating the concept of systems of communication into models of Australian prehistory' (Rosenfeld 1992:2).

As indicated above, a dominant strand of research in Australia has been the integration of rock art studies into mainstream archaeological research and, in particular, the establishment of regional prehistories (cf. Rosenfeld 1992:2). A seminal and influential project in this regard was Morwood's (1980) doctoral research in which he explored diachronic and synchronic variability in two primary artefact categories—rock art and lithics—as well as other types of evidence, in the Central Queensland Highlands. The processual approach was the first in Australia to fully integrate rock art within an archaeological analysis. Morwood (1980:iv) describes his approach:

As two strands in the web of evidence documenting the workings of a cultural system, a combined study of art and stone offers potential for yielding a more detailed account of the processes by which archaeological observations relate to their cultural context, and the manner in which this reflected environmental and external ideational influences.

Morwood's (1980) approach was a particularly significant methodological development given the manner in which he explored the structural patterning and relationships between rock art and a number of other lines of contextual evidence, not only lithics but also shelter morphology, environmental categories and intra-site positioning of art. This approach, utilising comprehensive and multiple strands of evidence, has also been adopted by Ross (1997) and will be discussed further below.

Morwood (1980:408) identifies a pattern of relatively homogeneous, widely distributed and older rock art and lithics which, in the mid-Holocene, gave way to restricted distributions of both mediums that exhibited regionalised character. Morwood (1980:410) suggests that these trends may reflect fundamental changes in the social organisation of Aboriginal groups and inter-group communication. This general trend in the temporal and spatial patterning of rock art was to be subsequently identified in structural analyses conducted elsewhere in Australia, and was accompanied in some studies by the integration of concepts of information exchange theory (e.g. Morwood 1984; Lewis 1988; McDonald 1994, 2008a).

Lewis (1988) analysed changes in the Arnhem Land corpus of rock art with reference to postulated social strategies developed in response to changing environmental conditions. His theoretical position (Lewis 1988:79) is grounded in information exchange theory, which was at this time developing internationally (cf. Wobst 1977; Conkey 1978; Gamble 1982), whereby art is conceived as being a part of an 'integrated information system'. An information system, in this model, is seen to be both determined by, and constitutive of, social strategies of adaptation to particular ecological systems. Art style is 'interpreted as a marker of social identity' (Lewis 1988:79). Lewis developed a chronology based on a methodology that was focused on variability in human figures and their associated items of material culture. Material culture items that possessed at least one temporal boundary were considered as key for the purposes of defining relative art style periods. By identifying the material culture and its associated motifs, Lewis (1988) was able to then define the stylistic features of the imagery. The earliest period identified (Boomerang Period) is widely distributed across the Arnhem Land plateau. This characteristic of the style provided Lewis (1988:80–81) with the circumstantial evidence to suggest its age. The linking argument behind his hypothesis, that the style is dated to a time prior to the full physical effects of the post-glacial sea level rise, is that its widespread distribution is indicative of a large information exchange network. At this time, the country was semi-arid and, accordingly, it was argued that a large ecological territory would have been required by a sociolinguistic group. In addition, in such an ecological environment, communication between small local groups needed to be open. Similarity is emphasised over difference so that local groups have access to economic resources that are widely distributed. The widespread stylistic similarity of the Boomerang Period is seen as a reflection of people emphasising regional integration. The subsequent period defined by Lewis (1988) is the 'Hooked Stick'/Boomerang Period. This period is comprised of two distinct yet interrelated stylistic units, including regionally distinct styles and the widespread and relatively homogeneous Rainbow Snake complex. The regionalism inherent in this period is seen by Lewis (1988:86) to reflect an increased social concern with local territories. The regionalism is explained by reference to environmental conditions that ameliorated at the end of the post-glacial maximum and allowed social groups to occupy smaller territorial areas and, via rock art, emphasise group difference.

A similar pattern of an earlier geographically widespread homogeneous rock art corpus, which gives way in the late Holocene to regionalised rock art styles, has been identified in north-eastern Australia (David & Cole 1990; David 1991). The argument presented by these authors to explain late Holocene regionalism was tied in with a contemporary archaeological debate in regard to a perceived major structural change (intensification) of socioeconomic systems in Australia at that time (David & Cole 1990:788). The earlier widespread rock art style was seen to have operated in an extensive open sociocultural network, which acted to minimise the risk of resource shortages during the period of Pleistocene aridity. By contrast, the late Holocene regionalism in north-eastern Cape York rock art was explained as reflecting increases in population, a fragmentation of groups and regionalism of inter-group activity (David & Cole 1990:803).

The premise underlying studies of rock art as functioning systems of non-verbal communication and information exchange is that 'art functions (in part) as an expression of social identities, but for inter-group identity markers to operate meaningfully, stylistic differences must remain within the bounds of mutual intelligibility' (Rosenfeld 1992:3). The contrastive models of open versus closed communication systems has been described by Rosenfeld (1992:6) as an oversimplification of both environmental constraints on human adaptations, and of the range of social networks that operate within Aboriginal societies. In the European context where, in similarly conceived projects, researchers have inferred boundaries within society based on bounded visual styles of artefacts, this has been described as 'an imaginative leap', whereby in the direct move from metaphor to reconstruction, the reading of the evidence 'becomes increasingly capricious' (Bradley 1991:78).

These studies often deny or at least fail to explore the possibility of functional variability within single periods of time. That is, art is ascribed one function only, which is to express social identity (Rosenfeld 1992:3). Also, these approaches have been pursued within the structural/functional theoretical paradigm of processual archaeology and, accordingly, have been largely ahistorical. While concerned with cultural process rather than culture history (Morwood & Smith 1994:21), these types of studies do not address the transformation of social change, but merely correlate different periods of rock art styles with different environmental/ecological periods. In these types of studies, distribution patterns in rock art are used as circumstantial evidence to assign a recognised style to a particular period, and rock art is seen to reflect change in social organisation, interaction and patterns of settlement. They do not deeply explore the actual practice of rock art as functioning as a messaging mechanism in systems of information exchange (Rosenfeld 1997:290), but, rather, the function is assumed.

Officer (1984) examined the pigment art of the middle and upper reaches of the Georges River, located immediately to the north of the Upper Nepean catchment, with the aim of examining formal variation within a 'discrete regional sample', in order to explore the function of medium and style. Officer (1984:76) found that the rock art is similar in terms of broad conventions with the wider region but that regional variations were evident. Officer (1984:76) found the assemblage to be 'fundamentally diverse', and that dominant forms were lacking. He raises the issue that his fine-grained classification scheme may have contributed to the diversity but rejects this explanation by comparing the Georges River rock art with both the pigment and engraved art situated further to the east. Officer (1984:65, 77) found that, in terms of major figure shapes, the amorphous character in outline and infill, and the range from naturalistic to formalised, the pigment art is similar to sites in the east. Officer (1984:68) also concludes that the engraved component was similar to that located to the east of his study area. Accordingly, he discounts a style boundary existing between the Georges River and the coastal margin (Officer 1994:70), and, like McMahan (1965, see above), finds a style boundary at the Georges River demarcating the north from the south.

Officer (1984:71) argues that the open context engraved motifs were more strictly bound by formal conventions compared with the sheltered pigment rock art in the region. While he argues for stylistic unity between the two media, he suggests that the differences may reflect functional variability. Officer (1994) looked directly at the formal qualities of the art itself to provide the key to understanding this variability. Invoking the proposition that art has more potential to possess multiple and abstract meanings if it is more formalised and less constrained by figurative detail, Officer (1984:83) argues that the 'casual use of form ... [in the pigment art]... could reflect a loosely defined or secular operational context. Carved figures on the other hand, appear to have required a more consistent representation, perhaps in order to communicate the established and more conventional'. This research was based on an assumption of contemporaneity of all the sheltered pigment rock art; the notion of sequential change was not considered. While this assumption may not be valid, Officer's fine-grained analysis of formal variability was a significant methodological advance in rock art studies in Australia.

Sefton's (1988:20) study of the central Woronora Plateau was more broadly focused, and not specifically aimed at analysing rock art. Her primary aim was to explore archaeological patterning in relation to historically documented territorial boundaries, specifically a territorial boundary between the Tharawal and Wodi Wodi. Sefton also sought to define whether or not differences between coastal and inland areas were evident. In regard to shelter sites, Sefton (1988) conducted a series of multivariate analyses, which revealed strong patterns of inter-site variability. The most significant separation occurs between shelter size and various site associations; large shelters are located in close proximity to other archaeological site types, while small shelters are located at distance from other archaeological sites. Chi square analyses were carried out on the results of the correspondence analysis in order to test for significance in relation to the archaeological question of variability in settlement patterns between catchments and the inland and coastal areas. The results indicate a significant difference between the two catchments and, to a lesser degree, in relation to the inland/coastal sectors; large shelters in the Georges River and coastal sector are close to another archaeological site, in contrast to the Cataract and inland areas, where they are not. While of less importance, shelters in the Georges River and coastal sector contain imported stone artefactual materials and higher counts for charcoal drawings. Sefton (1988:108) interprets this evidence as being informative of differing settlement patterns between the two catchments and coastal/inland areas.

Sefton concludes that the results of her analysis confirm the presence of the Tharawal and Wodi Wodi boundary and, to a lesser extent, a coastal/inland separation of settlement patterns. While it may be questioned whether these results are indicative of a tribal boundary, they do show strong patterning in regard to factors including site density, location and associated inter-site variables. On their own, these factors are equally suggestive of patterned variability in terms of site function, settlement and land usage rather than as indicators of territorial differences. However, the spatial patterning evident from Sefton's analysis of site and artefact distribution on the central Woronora Plateau suggests that a search for spatial patterning in the Upper Nepean catchment could be similarly rewarding and, if this was tied in with a detailed examination of the art itself, it may provide greater explanatory potential.

As researchers have sought to examine regional rock art assemblages at higher theoretical levels, it has become evident that the degree of analytical resolution of classificatory schemes used may not adequately serve these goals (Officer 1991:113, 1994; Rosenfeld 1992:235; Davidson 1997:218). Rosenfeld (1992:235) describes this problem as '[t]he classificatory systems and comparative analyses used have not been geared to an examination of the dynamics of image production and perception in information exchange'. This issue is especially relevant in regard to figurative bodies of art, which are inherently difficult to break down into constitutive components or elements and which, furthermore, by their very nature, encourage a figurative classification.

In a significant departure from conventional methodologies, Officer (1984) classifies imagery in terms of its formal construction rather than figurative motif type categories. Officer (1984:15) recognises that the categorisation of rock art into figurative types led to the clumping of motifs that possessed a diversity of form and that, furthermore, much of the art remained unclassifiable as it was indeterminate in terms of figurative models. Officer (1991:113) poses questions such as when is an anthropomorphic image actually a lizard, for example, which emphasises the subjective and problematic nature inherent in figurative motif type classifications. He describes the problem as '[f]igurative categories tend to be used as appropriate units within supposedly formal and stylistic analyses. That the category may be hiding rather than revealing the graphic vocabulary is often overlooked' (Officer 1991:113).

While inherently problematic, in terms of subjectivity and substantive relevance, broad figurative motif classification systems are unable to handle variability and diversity in graphic form. This is a critical problem in the exploration of regional assemblages where the identification of patterns of heterogeneity and/or homogeneity in rock art underpins the basis of explanatory and interpretive analysis. Many researchers now seek to classify their material in a manner that affords greater analytical control over the form and graphic construction of imagery (cf. Taçon et al. 1996; Frederick 1997; Ross 1997; McDonald 1999; Gunn 2005). While this approach is relevant in enabling greater analytical rigour and control on variability, and hence on the exploration of chronological and spatial patterning, it is considered in this research as intrinsic to approaches that seek to explore the nature of imagery as a system of meanings (cf. Morphy 1999). However, while appropriate in a strictly structural analysis, a purely formal analysis as proposed by Officer (1994) potentially divorces the object of investigation (usually the social or cultural in one form or another) from the material evidence itself (this is discussed further below).

Demographic issues underpin McDonald's (2008a) explanatory framework in her 1994 doctoral research, in which she examined the Sydney Basin rock art in a broad regional study. McDonald's (2008a:1, 350) research was aimed at exploring stylistic variability in engraved and sheltered rock art in terms of synchronic and diachronic variation, medium and reconstructed site context (the latter being a crucial basis for her interpretations). The theoretical approach was informed by information exchange theory, with style defined as a particular way of doing things or producing material culture that signals similarly constituted but different groups of people (McDonald 2008a:1). Anchored to an interpretation of changes in social organisation throughout the Holocene, McDonald (2008a:349) argues that art practice intensified between 4,000–1,000 BP, and was related to a period of increased population. Rock art, she argues, acted during this period as a social mechanism to mediate 'uncontrolled and possible conflict-marked interactions'. From 1,000 BP, a posited shift away from the occupation of shelter sites to open habitation contexts was argued to imply a shift in the social system, which McDonald (2008a:350) suggests increased further the need for social mechanisms to facilitate large-scale group cohesion. She suggests that many engraved open context sites may have been produced in this period.

McDonald (2008a) found that clinal-style patterning correlated with ethnohistorically defined Aboriginal language group areas. Further patterning was evident based on drainage basins located within language areas that, she argues, may be indicative of the operation of smaller local group territoriality. Patterning between engraved and sheltered art was also identified. The engraved rock art located in open contexts displays relative homogeneity across the region; McDonald (2008a:350) argues this demonstrates that this art system functioned as a broad-scale cohesive mechanism. Conversely, McDonald found that the shelter rock art is of greater heterogeneity, demonstrating localised group-identifying behaviour. The Guringai language area in the central Sydney Basin appears to be its central source of cohesion. However, this influence seems to be non-existent in the south of her study area, including, at least partially, the Upper Nepean

catchment. A previously identified style boundary at the Georges River was confirmed by McDonald's analysis (cf. also McMahan 1965; Officer 1984). This defined style boundary is based on the presence and proportions of different motifs and overall schematic differences (McDonald 1994:333). McDonald argues that this is indicative of either a reduction in the level of broad-scale group cohesion between groups to the north and south of the Georges River, or alternative social strategies operating south of the Georges River. Given that McDonald's study did not deal with the entirety of the Upper Nepean, a detailed analysis of the rock art and its associated inter-site patterning will provide a greater understanding of this area.

Ross (1997:32) emphasises the necessity for establishing, independently of style theory, the behavioural context in which art is produced, and has developed a strong contextual approach to satisfy this endeavour. Ross's (1997:1) research was focused specifically on the analysis of one rock art motif type in north-west central Queensland: a distinctive anthropomorph that occurs in a discrete regional area and dominates the local art assemblage. In order to explore the 'operation' of the art system, specifically in processes of the negotiation of social strategies, Ross (1997:18, 21) examined the formal attributes of the motif, its inter-site and intra-site distribution, its relationship with other motifs, and details of the geographic, environmental and archaeological context of the sites in which it occurs. Ross's (1997:25) approach was to explore the interrelationships between these various variables, which she considered to be attributable to 'the choices the artists made when producing art', and the 'organising principles which provide the patterns which characterise the art system'. Coupled with a behavioural theory of style as a social strategy, Ross (1997:32) argues that recourse to independent evidence that addresses the 'ways in which the artist has utilised, manipulated or modified the art in order to mediate a particular social outcome', is necessary to provide explanations for patterns. Her analysis revealed that the anthropomorphic motif was a spatially and temporally discrete art style, and that it separated into two types, Basic Motifs and Detailed Motifs, and that each occurred in different environmental contexts. Ross (1997:131) argues that this spatial discreteness suggests that the motif may have been related to a purposeful process of boundary maintenance, and that this may have arisen within the context of widespread trade networks, which operated in the region during the late Holocene. This research is particularly interesting in regard to the high level of patterning revealed by Ross's analysis of the interrelationships between a wide range of associated variables. She argues that these patterns are informative about why they may have been produced and under what circumstances the patterns may have appeared (Ross 1997:155).

Frederick (1997:209) has also explored patterns in various aspects of the graphic structure of rock art, and how these relate spatially to the use of the physical environment, in an analysis of the rock art at Watarrka National Park in Central Australia. Frederick identifies a chronological sequence, which includes two distinct phases of rock art production, identified as a shift in the technical mode of art production, corresponding to changes in the structuring of graphic designs and in the frequency of production (Frederick 1997:271). In order to examine inter-site variability for the purposes of correlating site distribution patterns with changes in land use or differences in site function, the physical environment was ordered into three spatial units based on topographic and geomorphological criteria (Frederick 1997:97). By distinguishing between the different environments within the broader landscape, Frederick (1997:210) was able to look at spatial variations in rock art density and site associations. For example, site complexes containing larger sites surrounded by a 'constellation of smaller sites' were identified in some units. Frederick (1997:209) sought to distinguish the fundamental characteristics of the assemblage in a detailed classification of the art. This included an assessment of diversity in media and technique, the frequency and spatial distribution of graphic categories (stencils, figurative, non-figurative, track and indeterminate graphics), graphic classes and basic graphic elements. The analysis of these variables was contextualised within the spatial configuration of the three environmental units of

the study area. The earlier phase of art is characterised by the use of a wide variety of pigment colours, little evidence of re-marking, a small range of graphic vocabulary and little variability. The few elaborate graphics were found to be site specific, which Frederick argues is suggestive that they were definitively associated with particular places. Art representative of the earlier phase is present in 92 per cent of rock art sites, and is evenly distributed across the landscape. The art of the recent phase, however, differs significantly to the earlier patterns in that there is a restriction in the range of pigment used, an increase in the diversity of graphic designs, an efflorescence of re-marking, and changes in landscape use. The identification of both continuities and discontinuities in the production of rock art was hypothesised by Frederick (1997:271, 335) to reflect and express changes in the social context within which it was produced during the transformation of the social geography and land use that occurred at the time of Aboriginal and European contact.

Numerous archaeological studies in Australia have referred to the symbolic meanings embodied in stone artefacts, and of stone itself (McBryde 1986; R. Jones 1990; Taçon 1991; Paton 1994). Similar approaches, which consider deeply the role of rock art as a system of symbolic expression and meaning, and how it may encode the Dreaming or totemic geographies, are now also beginning to emerge (e.g. Taçon et al. 1996; Layton 2000a; David 2002; Taçon 2008a:164). In the Laura region of north-east Australia, Rosenfeld (1982:216) found that certain motifs tend to occur in association with one another, and that the pattern of site clustering, each with an identifiable suite of motifs, may reflect different cultural connotations. She argues that the different imagery may relate to the depiction of variable topics such as ancestral figures, sorcery or secular themes. Taçon et al. (1996) hypothesise that elements of the ethnographically known Rainbow Serpent mythology in northern Australia may have emerged in the early Holocene, when Rainbow Serpent imagery appears in the rock art in Western Arnhem Land. More recently, David (2002:200) has argued that the recent regionalism in Cape York rock art indicates not only a changed geographic structure, but also 'newly regionalised referential systems'. David (2002:204), in moving beyond a formal analysis, explicitly addresses the referential properties of the animal motifs in recent Cape York rock art. These motifs, David (2002:204) argues, 'emerged as meaningful ... as components in regionalised networks of reference that served to order social space and meaning in the world'.

In summary, earlier rock art research in Australia was predominantly focused on the visual form, which methodologically and conceptually is highly abstracted from its materiality and physical associations with other imagery, its material support and location within the landscape. With a strong focus on the formal properties of imagery in Australian research, there has been a tendency to abstract rock art from its archaeological context. Studies that have focused on a broader suite of contextual data, and, in particular, the incorporation of detailed geographic and environmental locational variables, have enabled deeper explorations of patterns in rock art diversity. Another significant development, informed by the recognition that rock art predominantly relates in some way to ideology and religion, is the recent enquiry into the emergence and transformation of beliefs via an analysis of rock art.

4.2 Anthropological Exegesis

Rosenfeld's (1997:289–290) important critical review of the social context of rock art production in Australia sought to examine how it expresses group identity and territoriality, which she argues remained an implicit but poorly explored concept in archaeological investigations. The examination of the social contexts of rock art production in varied environment and art style regions allowed Rosenfeld (1997:297) to recognise the inherent complexity in regard to

the relationship between rock art and the manner in which it expresses a social landscape, which goes well beyond the ‘model of reciprocity of access to resources between members of territorial groups’. In regard to regions that archaeologically are defined via rock art as being geographically bounded with an internally coherent stylistic expression, Rosenfeld (1997:292) argues that not only is their internal homogeneity variable, but that rock art articulates with a ‘very different expression of sociality and territoriality’; differences obtained between regions in the nature of rock art, social significance of rock art localities (including the artist’s affiliation to that locality) and of the social contexts of rock art production (Rosenfeld 1997:292).

For example, Rosenfeld compares the rock art produced in the Central Queensland Highlands with that of the West Kimberly. In the Central Queensland Highlands, rock art is comprised predominantly of stencils, and it occurs mainly at or near camping sites. Rosenfeld (1997:292) argues, therefore, that this art is marking patrilineally determined territory, which is the habitual foraging range and resource of related men and their families. In addition, in this area, rock art is also associated with burials, and this art, which consists of formal motifs, marks the affiliation between the deceased and a locality. Rosenfeld suggests that the rock art in this region is an individualised expression of habitual residence and affiliation. By comparison, in the West Kimberly, Wandjina motifs mark focal localities in a patrilineal clan’s estate, which define a totemic locus for clan members’ ritual obligations and the expression of their socially constituted identity. These localities are totemic increase sites, and less dominant motifs (plant, animal and other), which occur in association with Wandjina motifs, are highly site specific. Given that, in this area via affinal relationships, a group’s foraging composition and range (and rights) extend far beyond a patriclan’s estate, Wandjina rock art expresses men’s socially constituted identity and ritual (clan-based affiliation to territory), but it does not articulate habitual interpersonal relations, and hence does not determine access to resources (Rosenfeld 1997:293). Despite the rock art from these two different regions functioning in two different structures of sociality and land affiliation, and expressing two very different aspects of identity, Rosenfeld (1997:293) notes that from an archaeological perspective both bodies of rock art possess stylistic unity (they are regionally distinct and possess a uniformity of style and dominant motifs), which is predicted by their closely bounded social networks. However, the two bodies of rock art do not reflect the different social contexts and identity that they each express.

Rosenfeld (1997:293–296) also compares the production of rock art in Western Arnhem Land with that of the Central Ranges, Central Australia. These are two highly contrastive environments, where in both places rock art is produced in at least two separate social contexts. Western Arnhem Land rock art is comprised of a widespread, distinctive rock art province (with clinal rather than exclusive stylistic patterning), and is produced in a ritual context comprised of art of the Dreaming (a secular context of art about the Dreaming) and anecdotal art. Rock art is not a central feature of a sacred locality, but where rock art of the Dreaming is produced, it marks patriclan-owned localities, and marking is constrained according to totemically sanctioned relationships (Rosenfeld 1997:294). In Western Arnhem Land, residence and foraging groups are loosely patterned, and there is a high degree of fluidity relating to access to territory and resources, which is mirrored in the fluidity of rights to produce non-sacred paintings (Rosenfeld 1997:294). While rock art in this region may visually encode territorial affiliation as constituted via social identity, or merely through rights of residence, it is not unambiguously evident from an archaeological perspective (Rosenfeld 1997:294). Rosenfeld (1997:294) concludes that in this region the ‘essentially secular use of formal imagery has blurred the archaeologist’s ability to distinguish between expressions of individual and supra-individual identities’.

In the Central Ranges, rock art, at least superficially, is also comprised of a widespread and uniform style, and Rosenfeld (1997:295; see also 2002) identifies two main site classes, each of which contain different types of rock art: camp site shelters, which contain secular art (individualised stencils and loosely structured graphic imagery), and restricted sites, some of which are totemic increase sites that contain highly formalised and often unique imagery. Rosenfeld (1997:296) argues that these two categories of rock art sites seem to reflect very different aspects of territorial affiliation. The former relates to people's habitual foraging ranges, while the latter expresses formal relationships. In this area, a patrilineal totemic affiliation prevails; however, other totemic affiliations can also be emphasised by people to negotiate social relations and access to territory and resources (Rosenfeld 1997:295). Rosenfeld (1997:296) argues that the parallelism between Western Arnhem Land and the Central Ranges in dual contextual traits of rock art, which occurs in two highly contrasted environments, 'suggests that our models of style in relation to environmental adaptation are inadequate to deal with the full complexity of the realities of rock art production'.

In a summary of her analysis, Rosenfeld (1997:296) argues that rock art practice is an expression and mediation of social relations instead of an explicit expression of territorial affiliation. Rosenfeld explores this issue by distinguishing between two categories of rock marking, each of which is an archaeological indicator of particular expressions of social identity. One of these is graphic images, which are produced according to conventions of graphic construction, while the other is marks that result from purely mechanical processes, such as hand stencils. Rosenfeld argues that the former relates to supra-individual identity and is concerned with religion operating '... primarily to visually express and mediate supernaturally sanctioned power relationships', while the latter is concerned with individual identity (Rosenfeld 1997:291). As a result of this research, Rosenfeld (1997:296, 297) comes to a number of conclusions:

The creation or maintenance of ancestral images is restricted to individuals according to their structurally determined identities and that art created in such contexts is narrowly constrained in terms of style and motif, and that subject matter and style emphasise the nature of the artist's contextualised relationship to a locale. In its reference to appropriately expressed concepts of the dreaming it expresses his/her structurally determined interests in the locale as defined via the legitimacy of the ideational system of social relations.

This predicts a correspondence between rock art, which is expressive of religious themes, and its formal properties. However, it also sets out an avenue of enquiry into the expression of identity that resulted in the production of rock art: 'The creation or renovation of such paintings is an act of expressing ... classificatory and contextual identity, and of relationship to place via the spiritual power of the "law"' (Rosenfeld 1997:296). Rosenfeld (1997:296) therefore states that religious rock art functions to express and mediate social relations rather than explicitly territorial affiliation, and that this is 'an affirmation of territorial affiliation via social relations as constructed through cosmological principles'. On the other hand, the execution of rock markings and non-sacred designs is generally concurrent with rights of residence that are much more inclusive. This rock art does not evoke rights of control over place, nor of ritual affiliation to it, and it refers to a person's individual identity but does not define socially constructed identity (Rosenfeld 1997:297).

In Aboriginal geographies of country, the explanatory framework, which provides a cohesive ontology and legitimating basis, is encoded in the mythology of the creative actions of Ancestral Beings (Rosenfeld 2002:62). As David (2002:205) reminds us, the genesis and sociopolitical inheritance of the Dreaming, as it is known ethnographically, has a history, and, as he and others (Taçon et al. 1996; Rosenfeld 2002; Taçon 2008a) argue, this may be explored archaeologically. All of these studies have used rock art to illuminate such research. Rosenfeld (2002:62) specifically argues that the role of rock art in such archaeological analysis is appropriate, as it is one of the

more enduring expressions of the cultural praxis associated with a social geography, which is underwritten by such metaphysics. However, the ethnographic material in Australia makes clear that rock art is produced in a diversity of cultural contexts (Layton 1992:17). Layton (1992:17) notes that rock art may be the object of increase ceremonies, such as in the Western Kimberley or in Central Australia, and in other contexts it is illustrative of Ancestral Figures, but, without being the object of ritual focus, it may simply record secular events.

Nevertheless, it is emphasised by anthropologists that in Aboriginal Australia, art, including all its various manifestations (rock art, body painting, sand drawings, etc.), is a form of spiritual power: 'it is an intervention of the world of the mythical past in the present', and for this reason art exists in people's heads until such time as it is created to fulfil a specific purpose (Morphy 1999:13). Art is information, and the means by which knowledge is transmitted regarding the 'creative forces that shaped the world and will enable it to continue into the future'; it is for this reason that Aboriginal art is referential (Morphy 1999:13). Aboriginal art encodes meaning in two primary representational modes: iconic (figurative) that is based on 'look-alike criterion'; and non-iconic (geometric) that bears no formal resemblance with that which it represents (Morphy 1999:13). The question of meaning is not only an outsider's problem, but, as Morphy (1999:13) notes, an insider's question as well. According to Layton (1992:86; see also Morphy 1999:21), like any system of communication, contextual information is necessary in order to understand Aboriginal rock art:

The successful functioning of the art in its cultural context depends on the ability of other members of the community to decode its meaning at one or more levels. Visual clues are therefore deliberately encoded in both style and iconography to convey messages according to local convention.

Both Morphy (1999:15) and Layton (2000a:179) consider the different systems and manner by which Aboriginal peoples produce and interpret art, and offer to an archaeological audience a consideration of these principles, so that the conduct of analyses can reasonably proceed within contexts where the original discourse and meanings are unknown.

Layton (1992:29), recognising that Aboriginal Australia is not culturally uniform, questions whether or not any regular patterns in the content or distribution of rock art, revealed by anthropological understanding, could be used reliably in an archaeological research context. He argues positively in this regard, and indicates that the spatial organisation of rock art, both within and between sites, can provide a key to interpreting its various functions. According to Layton (1992:77), secular rock art is patterned differently from that which is totemic art. The sites containing secular rock art are not spaced in such a way as to 'map the focal points of a clan estate'. In addition, secular rock art is represented by a greater range of subjects (Layton 1992:77). Likewise, sorcery rock art can be distinguished from art by its style and distribution (Layton 1992:86).

However, Layton (1992:87) provides many cautionary examples of cross-cultural differences in Australia in regard to the significance of various features of art. For example, while in some areas the elaboration of a motif's infill will distinguish it as religious as opposed to secular, elsewhere this principle does not apply. In another example, Layton (1992:88) suggests that where secular rock art is produced with no restrictions on whom may paint, it may be expected that a site will contain art over all surfaces, and that there will be random selections of subjects depicted. However, the production of sacred rock art can result in the same pattern, and, therefore, the difference between sacred and secular contexts may be archaeologically invisible.

According to Morphy (1999:20), Aboriginal religious art is mostly non-iconic, because it conceals meanings and is, therefore, suited to a system of restricted knowledge. Iconic or figurative art, on the other hand, is predominantly secular, and Morphy (1999:20) explains that this is because the

schema of a figurative system does not easily represent the metaphysical concepts underpinning the complexity of an Aboriginal worldview. While non-iconic art is superficially obscure, upon adequate instruction, an initiate is enabled to see the different levels in which relationships between people, Ancestral Beings and land are encoded via art, in order to understand the shape of the landscape and become aware of its transformational history (Morphy 1999:20). By contrast, a figurative system is less able to illustrate or represent metaphysical concepts relating, for example, to the shape-changing properties of Ancestral Beings, and the blurred boundaries between the animate and inanimate (Morphy 1999:20).

Davidson's (1995:891) argument, that in representational systems the relationship between form and meaning is *arbitrary* and hence requires people to interpret meaning, implies that over time those meanings become unrecoverable. His concern in this regard is that, from an archaeological perspective, this means that we may not, therefore, go beyond purely utilitarian interpretations towards an understanding of symbolic systems. While in general agreement, Morphy (1999:21) nevertheless suggests that an archaeological interpretation of meaning is possible, insofar as it is the structured relationship between form and meaning that allows an analysis to proceed, and from which it is possible to hypothesise about how the art in question encodes meaning.

Layton (2000b:51) argues that visual representations point in two directions: one outward via ostensive reference to a world of experience, which can be perceived by an audience; and the other inward, which is the world of possible meanings. He is particularly concerned that the representational (iconic) qualities of figurative rock art should be recognised analytically for how they function within an intersubjective sphere of interaction: 'iconic forms point to a tradition of usage through which ambiguities are reduced, and are symptomatic of an inter-subjective world defined by the artist's cultural tradition' (Layton 2000b:51). This means that attention needs to be paid to the manner in which rock art, as communication, is employed as a social strategy, and meanings should not be considered as entirely open ended because:

during social strategies through which elements of an artistic system are utilised, reference is made either to objects or agents (through denotation or ostension), or to a broader cultural discourse, which exists outside the message itself (Layton 2000b:49).

There are two types of referential contexts of social action in which rock art is situated: the broader cultural discourse; and the world of perceived objects (Layton 2000b:50). In Australia, the cultural discourse of rock art as praxis is about landscape and the creation period. The reference to objects, which may be meaningful on a number of levels to different individuals within that cultural discourse, is nevertheless meaningful within a framework of shared experience and meanings (the intersubjective community of knowers) (Layton 2000a:49). In this sense, Layton (2000b:49, 52) argues that if the pattern of references is sufficiently habitual as to leave an archaeological trace, referential contexts may be explored by analysis of the representational qualities of rock art and their distribution in the landscape.

Like Layton, Morphy (1999:21) emphasises the role of the formal properties of the art system in communicating messages. As a first step in any analysis of art, the form of art objects should be investigated in order to question how something means, for 'it is this that reveals the nature of the system of interpretation, and enables art to be connected to its interpretive context' (Morphy 1999:21). Thus, Morphy (1999:21) emphasises that in archaeology it is both the reconstruction of context, which enquires about 'to whom it means, and in what contexts', and an investigation of the formal properties, which enable it to be 'interpreted in the ways it is', that provide the empirical foundation for research. Layton (1992:88; 2000a:176) emphasises the value of considering the location of rock art in the landscape in analysis, and indeed suggests

that Indigenous people also read art in this way, in order to deduce meaning (see also Merlan 1989). Layton (1992:88) and Morphy (1999:22) consider that archaeological investigations of the interpretive context of rock art, while possible, will necessarily be incomplete.

4.3 Summary: Breaking Down Dualist Concepts

An epistemological respect for the multivalency of rock art expression has been a foundation of research in Australia, if not an impetus for its paradigmatic trajectory. While the complexity of the social function of rock art has also been recognised for some time (cf. Rosenfeld & Bahn 1991:vi), this notion has not been fully integrated in formal methodological and theoretical approaches to the same degree. The use of Wobst's (1977) overarching theory of style, as non-verbal social communication and information exchange, and the notion that rock art expresses group identity and territoriality, has been a significant trend in Australian rock art research. Rosenfeld (1997:290), however, notes that the manner in which rock art operated in networks of communication is little understood. Her review of the social contexts of rock art production, as outlined above—which shows that comparable structural patterns in rock art may exist between different regions and in highly contrastive environments and, furthermore, do not reveal differences regarding social context and identity—indicates that models of style in relation to environmental adaptation are inadequate for dealing with the full complexity of rock art production (Rosenfeld 1997:296). The use of overarching interpretive frameworks often denies that rock art is complex in its social function, and potentially diverse in terms of the motivations that lead to its production and use. Such frameworks tend towards a conceptualisation of rock art production that is synchronically uniform in its purpose and social function and, in Australia, the ethnography reveals that this may not necessarily be so.

The emphasis on the use of style in archaeology is based in an ideology of modernism, which prioritises the way in which we know things in visual terms (Conkey 1990:7; Thomas 2004:212). The identification and interpretation of similarities, differences, homogeneity and heterogeneity in artefacts and cultural products of the human past has always been a concern of archaeology, and in these endeavours the concept of style has dominated material culture studies (Conkey 1990:5; Boast 1997:173). Formal variation and style came to be seen as equivalent (Conkey 1990:10). The privileged position that style has attained is arguably because it has been seen as that aspect of material culture providing a key to the social (Boast 1997:174):

Style has been seen as pervasive and universal to all forms of human production. Style is seen as that which distinguishes us not only from nature but from each other, both as cultures and individuals. It is that which situates the object in society as a social object—it is that which represents identity.

Style came to be used in the service of accessing social groupings or units, boundaries and interactions (Conkey 1990:10). Conkey (1990:10) notes that with the employment of style in this manner 'an extremely optimistic and productive period of archaeological research' ensued in America; arguably, the same could be said for rock art research in Australia. Whether conceptualised as passive or accidental—such as isochrestic style (Sackett 1986) active and deliberately employed in the negotiation of identity (Wiessner 1983), or symbolic and meaningfully constituted with the dynamic capacity to actively represent and act back on society (Hodder 1982)—style maintains an analytical separation between form and matter (Thomas 2004:213). The focus on style, and that it may be informative of the social, may have been something of a red herring; the nature of rock art itself as a behavioural manifestation has been largely unexamined in archaeological research contexts (Rosenfeld 1997:290).

Boast (1997:184) argues that style is not a meaningful category with which to define the social. The foundation to Boast's critique is based on a recognition that style, rather than being a universal cross-cultural phenomenon, is a contemporary concept based on a modern subject/object dualism (Boast 1997:174). However style is defined, whether as the material product of cultural systems or as a language to be read by social actors, 'an a priori distinction between the human actor and the material world' is implied. In this view, the material and natural world, to which the social is added by human activities, is based on a premise that 'there exists a basic essence or purpose to things prior to them becoming social'.

The recent concern with materiality in archaeology is related fundamentally to the conceptual distinction between form and matter that is, as Thomas (2004:202–209) describes, also a largely modern way of thinking.

Thomas (2004:202) argues that the conceptual separation of form and matter occurred within medieval scholasticism when the complementary distinction between them—but together making up a substance (as conceived earlier by Aristotle)—changed into a concern about the essential qualities of things being the key to an understanding of their behaviour. To illustrate this view, the form of a living creature is considered to be intrinsic to it, while the form of an artefact is considered to be imposed. It was this view of the opposition between matter and form that provided the possibility of viewing material things as the passive recipients of labour, and '[w]hen this version of form as a source of coherence that was exterior to material things eventually collided with the Cartesian opposition between mind and body, a closed conceptual framework resulted which emphasised the role of the dynamic human subject acting upon the dead matter of the object' (Thomas 2004:202, 203). Once thought was separated from materiality, substance became 'just there ... a bearer of qualities and attributes'. This, coupled with the idea that humans give form to matter, constitutes our understanding of archaeological evidence (Thomas 2004:204, 210).

The Cartesian philosophy of matter has been described by Thomas (2004:204–205) as 'the most austere of all', and conceives of matter as inert and only distinguished by its occupation of space, and from this view is derived the proposition that our knowledge of things must rest upon as abstract and mathematical a foundation as possible, because our experience of things is not up to the task. The modern theory of representation distinguishes thoughts or words from things (Thomas 2004:203). The notion that rock art motifs are symbols or signs associated by convention with that which they signify holds a powerful sway (Ross & Davidson 2006:325). Hodder's (1982) contextual and symbolic approach advocates that material culture is potentially transformative of human behaviour because the efficacy of artefacts resides in their meaning—that is, material culture is considered to be meaningfully constituted and this is via the agency of humans (cf. Thomas 2004:214). In this sense, humans invest meaning in things, but things themselves do not inhabit a world of meaning (Thomas 2004:214).

However, the meaningfulness of rock art may not reside solely within its symbolic properties. Rock art may not be just a symbol, nor only a social strategy employed in the service of achieving particular goals. It is feasible that instead rock art is no more or less than what is already present in the land. Isomorphic congruence is a term that describes the formal relationship between a rock art mark and a natural feature of the rock (cf. Rosenfeld 1991:137), when the graphic form has been produced to mirror the shape, or to be in a situated relationship with a specific feature of the rock. A drawn circular-shaped motif located in a circular concavity may be considered to be an instance of isomorphic congruence. This practice has been recognised as a characteristic of European parietal rock art (Ucko & Rosenfeld 1967:48; Thomas 2004:220–221), and is occasionally reported in Australian contexts (e.g. David & David 1988:153; Rosenfeld 1991:137; Taçon 2008b). Taçon et al. (2006:232) describe an example in the Wollemi National Park of an engraved bird head 'attached' to a natural depression, the shape of which resembles a bird's body,

and they argue that the depression is likely to have inspired the bird head to be engraved where it is. Isomorphic congruence also features in the Americas (cf. Taçon & Ouzman 2004:41), South Africa (Lewis-Williams & Dowson 1990; Ouzman 2001) and presumably in other places as well. The practice of integrating rock art with the natural morphology of rock, therefore, appears to be common. However, the incorporation of isomorphic congruence within archaeological analysis in Australia is not. The only work that explicitly analyses isomorphic congruence in Australia is that of Taçon and Ouzman (2004:46), who explore the phenomenon with reference to the notion of inner and outer worlds. They refer to animal figures depicted in a manner suggesting that their heads appear to disappear into cracks and crevices, for example, and argue that this reflects a concern with inner rock worlds (Taçon & Ouzman 2004:46). Taçon and Ouzman (2004:39) suggest that rock art sites are places where both inner worlds of extraordinary experience and the outer world of everyday existence are connected.

According to Ucko and Rosenfeld (1967:48–49), in Europe this relationship is explained in terms of the natural rock feature having suggested to the Palaeolithic artist the shape of an animal or part of an animal. Rosenfeld (1992:10–11) suggests that this may also be the case in Australia, whereby the ‘appropriation of the natural ... may operate at the level of graphic construction itself’, and that the integration of motifs within the natural morphology of the rock suggests that it ‘is an integral component of the artistic system of meanings’. In respect of rock art and its material situation on rock, specifically where it is placed in a formal relationship with natural morphology, Thomas (2004:221) suggests that rock art practice, rather than being representational of animals ‘distant from the cave’, may instead be elaborating something considered to be already in the rock. Lewis-Williams and Dowson (1990:14) argue that painting is a ritual act employing two principal elements, rock and paint, each of which have their own significance that cannot be separated from meaning. It is clear that an archaeological analysis of rock art may profit from a much deeper examination of its materiality than that commonly undertaken.

The charting of change in rock art abundance and stylistic uniformity or otherwise, within a temporal framework, resides at the methodological heart of research in Australia. The general model to emerge from analyses that consider the *longue durée* reveals a pattern of low-density and widespread distributions of rock art in the late Pleistocene to mid-Holocene that give way to regionalised and abundant distributions in the late Holocene. These patterns, generally, are interpreted to reflect the trajectory, over time, of increasing population levels and, correspondingly, increasing needs to mediate social complexity, access to resources, and so on. However, the notion of the one-to-one correspondence between rock art and population density has not received the scrutiny that, for example, stone artefact densities *vis-à-vis* population have (Hiscock 1981). Notwithstanding a consideration of site formation processes that may contribute to some archaeologically observable patterns, a deeper historical investigation, which considers the impetus for change within an endogenous framework, might approach the question differently.

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