

An Archaeology of absence (or the archaeology of nothing)

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Abstract

Through the context of contemporary archaeological practice in South Western Sydney, this paper explores themes of Australian Aboriginal archaeological interpretation, presenting two complementary frameworks for interpretation: the 'three-tiered framework' and the 'archaeology of absence'.

Examining the outcomes from a recent Aboriginal archaeological excavation at East Leppington, South Western Sydney, intra and inter site archaeological patterning resulting from long-term Aboriginal habitation, has been identified. The interpretation of the data has been undertaken on the premise that stratigraphically intact archaeological deposits are possibly the consequence of long-term practice of Aboriginal tradition and perhaps law. The interpretations are presented through the three-tiered framework.

To build further understanding of Aboriginal landscape use, this paper questions whether locations with 'nothing' should be considered important to an understanding of the whole. It is suggested that the context of empty space can be as important within a cultural landscapes as those locations where archaeological evidence abounds.

Nothingness is not a state of absence of objects but rather affirms the existence of the unseen behind the empty space. (Davis and Ikeno 2002: 255).

Australian heritage context has been provided by considering the two frameworks applicability through the Burra Charter 2013, and the Burra Charter Indigenous Practice Note.

Introduction

Archaeological investigation of a site or place may yield evidence, the creation of which was governed by Aboriginal law, tradition and power. Stratigraphically and/or spatially intact archaeological evidence may suggest long-term patterns of human occupation and behaviour – locations that were repeatedly used for specific purposes on each visit to a place. The locations and routines of camp establishment and consequential occupation can demark domiciliary (living) areas, resulting in a distinct archaeological signature. The two interpretative frameworks provide a mechanism for examining this evidence, connecting tangible entities to intangible social and aesthetic values.

The three-tiered framework enables the examination of notions of intangible and social heritage – the connection between places, space and the interpretation of physical evidence within a functional cultural landscape. Connection with the Burra Charter Indigenous cultural heritage management practice note is made, with particular emphasis on the definition of

places, Aboriginal connections to places and how Aboriginal communities construct heritage values associated with a place.

Material culture which is spatially and/or chronologically differentiated may present distinct patterning. The concept of 'the archaeology of absence' explores the perceptible connections in spaces with and without archaeology. Areas without a material signature are commonly not examined by archaeologists, nor do they tend to be contextualised within the current structures of archaeological interpretation. However, Aboriginal communities which maintain their tradition and law frequently describe the spaces without archaeology as contextually significant, and in some instances related to tradition, law, ceremony and/or Dreaming.

Aboriginal Heritage Management

Archaeological interpretation aims to take raw data and present it in a meaningful way, frequently culminating in a statement of heritage values. It does this by examining the past to provide a context for who we were; what were we doing; and where we were doing it (Johnson 2010). Interpretation commonly relates archaeological objects with human agents and their associated activities (Hodder 2012). Archaeological theoretical application, interpretation and the consequential outcome has a multitude of approaches that may be contingent on the context and objectives of the investigating agent (Johnson 2010; Hodder 2012).

Within cultural heritage management the difficulties associated with archaeological interpretation can result in the construction of too narrow a definition for Aboriginal places, sites and their spatial function over time (Hodder 1991, 1999, 2010, 2012; Ingolt 1993; Malpas 1999, 2008, 2011; Thomas 1996, 2001). The outcome can privilege tangible heritage over intangible aspects, or restrict the adaption and evolution of traditions as Aboriginal people reconnect to places that may have been denied to them in the past (Australian ICOMOS Practice Note 2013: 3-4).

Heritage assessment criteria at the state and federal levels (e.g. NSW OEH Guide 2010: 7; DEWHA 2009: 6-7) and the Burra Charter (Australian ICOMOS Burra Charter 2013: Article 1.2) ask practitioners to describe Aboriginal heritage values in both tangible and intangible categories including aesthetic, scientific, social, archaeological, spiritual and anthropological values. However, object-centric legislation (such as the NSW National Parks and Wildlife Act 1974 (NPW Act)) exerts an influence over the process of Aboriginal heritage management biasing towards the tangible perspective, particularly tangible objects that can be measured and quantified. Australian heritage regulators do require the relationship between an object and the cultural landscape to be described (for example in NSW: Brown 2010; OEH Guide 2010), although statutory protection frequently remains focused on the tangible object (noting that in NSW 96 Aboriginal 'places' have been declared since 1974 (OEH Guide 2015)). Often the effect is to emphasise tangible heritage at the expense of intangible heritage (Australian ICOMOS Practice Note 2013: 4).

There is some disparity between Aboriginal community cultural understanding and engagement with archaeological practice, and interpretation (Silliman 2001, 2005, 2009: 213, 2010; McKenna 2002; Byrne 2003; Harrison 2004a, 2004b); resulting in the 'subtle erasures of Indigenous people in both empirical analyses and historical representations' (Silliman 2010:29). Aboriginal communities view their ancestry as 'living', and embedded, like memory, in place and Country (Jones 2007; Silliman 2009). Their understanding of the archaeology adds further levels of complexity to the reading of objects, the recording of sites and any consequential interpretation. Aboriginal people may not view objects as things to be measured and studied (McKenna 2002; Bradley 2011); rather objects personify a direct connection to their ancestral past, tradition, practice, Country and the Dreamtime (Australian ICOMOS Practice Note 2013: 5). A key difference between the interpretative frameworks of Aboriginal and non-Aboriginal peoples may lie in the Traditional Owner's view of objects and material culture as the constituents of practices and tradition that do not hold significance, value, meaning or function without an appropriate social context (Byrne & Nugent 2004; Jones 2007; Silliman 2009:214).

Aboriginal communities frequently view themselves as belonging and coming from Country, where Country and Aboriginal people are one and the same – that is, a part of the land, the place and the cosmos (Morphy 1995; Darville 1999; Turner 2010; Bradley 2011). ‘We are part of the Land. The Land is us, and we are the Land. That’s how we hold our Land’ (Turner 2010:1). The notion of land and Country, combined with tradition and ceremony, means that Aboriginal communities may view their culture in a qualitative way – they are a part of the culture, the culture is a part of them. ‘Knowledge is embedded in social, political, emotional, economic, and environmental discourse that constitute everyday realities that are a reflection of everyday existence and an explicit arbitrariness of meaning’ (Bradley 2011: 58).

The difficulty for a heritage practitioner exists when moving between the archaeological data, or an extrapolated archaeological framework, into the intangible suite of values. If ‘objects are assessed in isolation from the place itself’ (Australian ICOMOS Practice Note 2013: 5) the connection between the physical archaeological things and the lived Aboriginal experience of Country and land can be lost.

Three Tiers of Archaeological Interpretation

The gap between quantitative recording and qualitative understanding, between fact and value, objective knowledge and subjective knowledge (Ingold 2005) has been addressed over the years by a number of interpretative frameworks (for example Hawkes 1954; Lourandos 1997; Tilley 2004; Hodder 2012). In this paper I propose a three layered, intersecting or ‘tiered’ approach to archaeological interpretation, moving from the ‘absolute’ paradigm of archaeological data, through inferred ‘networks’ of archaeological interpretation, to an ‘intangible’ application of the data within the system of Aboriginal tradition (Figure 1).

The tiers are of increasing complexity and ‘entanglement’ (Hodder 2012), moving between and from the data to different levels of interpretation. The mechanism is an iterative interpretation process, as it is possible to move back down through the layers of interpretation, drawing new data into the interpretative framework at any time. The three tiers of interpretation have been described in basic terms, but can be expanded in accordance with the available information and made applicable to a variety of interpretations (Figure 2). The tiers are intended to be discursive frames that can reflect broader trends in thinking and analysis, whilst allowing Aboriginal heritage values to change over time as Aboriginal people reconnect to places, thus adding to the interpretative framework as their understanding and cultural connections expand (Australian ICOMOS Practice Note 2013: 4). These three tiers can be seen to have some origin in Hawkes’ ‘Ladder of Inference’ (Hawkes 1954: 167; Evans 1998), albeit with the added complexities of a further sixty years of archaeological theory and practice.

Tier 1 – the primary data, comprised of descriptions, relating to immutable and/ or measurable information. For instance: there is a creek adjacent to a raised flat; the vegetation community is Cumberland Plain Woodland; there is a stone object, made from silcrete, which can be described as a ‘backed blade’, measuring 12mm; there are five grinding grooves on the sandstone of the creek bed, orientated north.

The direct interpretation of tier 1 data is objectivist or positivist, regarding the

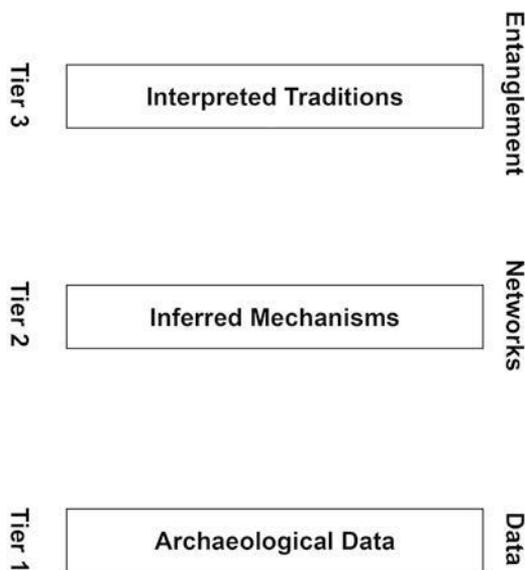


Figure 1: Three tiers of archaeological interpretation.

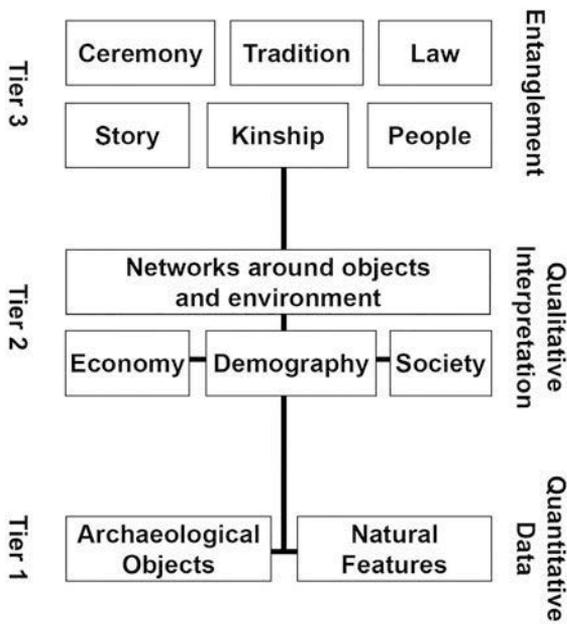


Figure 2: Possible archaeology, networks and aspects of interpretation within each of the three interpretation tiers.

archaeological data from a scientific position, with a focus on measurement and quantification – the immutable fact – drawing conclusions derived from the material alone (Hodder 1999, 2012; Tilley 2004; Ingold 2005; Johnson 2010).

Tier 2 – inferred interpretation of the data, takes the baseline data and places it within a framework or network. In this context archaeologists often consider three themes of Aboriginal culture: society, demography and economy (Lourandos 1997). This tier may be considered a hermeneutic approach, linking things and objects with local cultural codes and practices (Hodder 2012: Chapters 3 and 4; Johnson 2010). The networks create links between items, people, events, places, landscapes etc – where ‘things’ (the archaeology in the network) depends on other things, on people, on place, on agents etc.

Tier 3 – human ‘entanglement’ is based on interpretation and extrapolation of the data from tiers 1 and 2. The tier 3 entanglement take aspects of networks and data and enriches them through aspects of Aboriginal culture which do not have a physical presence, such as ceremony, traditions, law, stories, people and kinship. This third tier can provide an understanding of the importance of a stone object – it may reveal some of the complexities that a ‘simple’ object may conceal. This has the potential to reveal hitherto hidden values and meanings.

The third tier includes aspects of phenomenology (Appadurai 1996, Ingold 1993, Thomas 1996, Bender 2006, Ireland 2010) memory, and practice of traditions in landscape (Morphy 1995; Silliman 2009). The complexity and levels of entanglement exhibited by the third tier may incorporate the notion of powered landscapes (Foucault 1982; Silliman 2001; Spencer-Wood 2010; Spencer-Wood & Baugher 2010), with agents creating, enforcing and holding control over individuals within a society. The agents themselves may be tangible and intangible, organic and inorganic. They include a range of physical individuals, natural elements being and markers, combined with natural features (including constructed or built items), and ‘invisible’ markers.

Tangible agents may include Elders – individuals who have gained access to knowledge, through initiation and other cultural aspects. Such individuals convey tradition through rights and an ideology of a power. Non-human tangible agents may include constructed items, such as sentry stones or cairn markers (delineating tribal or clan boundaries, or the route of an initiation ceremony); living agents, such as trees (that may be viewed as ancestral beings); and natural agents (such as hills, creeks etc.).

Intangible agents can move beyond physical places, representing an interpreted past based on tradition and an understanding of the ancestral world. The whole landscape may be viewed as an ‘intervening sign system that serves the purpose of passing on information about the ancestral past’ (Morphy 1995:186). Morphy argues that landscape is integral to ‘the message’, suggesting that it is, in fact, a component of an ancestral past in which ‘places’ have been created from the inherent values understood within that landscape.

Such intangible aspects cannot be measured and recorded through the first quantitative tier of interpretation; whilst it is possible to record the locations, length and numerous aspects of the natural elements which create landscape (e.g. McDonald et al 1984), such measurements

do not provide interpretation which extends into or allows second or third tier interpretation and understanding.

Consideration should be given to the type and quality of third tier information (Hawkes 1954: 161-163), because archaeological data can provide evidence for long-term changes over considerable time periods. The third tier approach should not become 'self-fulfilling' or 'lacking a temporal dimension' (Evans 1998: 401), rather the first and second tiers of time-depth archaeological signatures should be used to test, substantiate and deduce the third tier (Darvill 1999: 109).

The interpretation of archaeological data may draw from any of the three tiers of the framework – from the first tier basic point data; through to the second tier development of a network around an aspect of data; and on to the application of the third tier, which governs the processes that may have resulted in the initial data point being created and resulted in the enduring archaeological record.

An Archaeology of Absence

One avenue for the third tier interpretation of archaeological data is through the 'archaeology of absence'. The archaeology of absence refers to the 'blank' spaces around objects and things, the locations and places without anything to 'measure'. In some instances it is these locations that can provide meaning to locations with tangible items. The blank spaces, the locations of 'absence', may provide Aboriginal people with the opportunity to understand the broader landscape context and give insight into the places and traditions which form an integral component of the place, along with their personal connection to Country. It is the archaeology of absence, the 'nothingness', which can provide a meaningful frame for understanding the places and objects that an archaeologist has recorded. 'Nothingness is not a state of absence of objects but rather affirms the existence of the unseen behind the empty space' (Davis & Ikeno 2002: 255).

The introduction of physical Aboriginal objects (archaeological data) to a 'blank landscape' naturally creates complexity; it introduces locations with data and without data. Subtle analysis embracing the archaeology of absence may present evidence for distinct cultural zones with and without archaeology. Commonly, archaeologists must construct a 'site boundary' around data, thus introducing the point at which data ceases to be present and 'collectable'; this is essential for heritage management carried out under the various Australian legislative instruments. The areas without archaeology are commonly not examined or contextualised within current frames of interpretation. However, consultation with Aboriginal communities who maintain their traditions and law have indicated that the spaces without archaeology are contextually significant, and in some instances related to ceremony or Dreaming.

In current archaeological theory and practice little attention appears to be placed on the use, function and meaning of the space between site boundaries. Yet this space is essential for a third tier of interpretation. Taking the example of an Aboriginal camping location, which may be defined as a domiciliary space (Memmott 2007: 37, 121), the initial arrangement and layout, consequential occupation and eventual re-occupation over time were controlled by Aboriginal traditions. These areas contained a number of physical features including: separate sleeping locations for families, men, women and young boys; a central location for dancing; and men's and women's areas. Within each separate area could be located one or more huts, wind breaks, a cooking area, hearths, a diurnal activity area and a swept (cleared) domiciliary area (Figure 3). Laws and traditions governed where and how people could erect huts and what space could be used for which activity. The arrangement of archaeological materials and absence of materials at specific intervals helps explain and define the traditions that may have structured the use of such space.

Archaeologically, the evidence for occupation of a domiciliary area depends upon the taphonomy and chronology of the camping area. On excavation, a domiciliary area may only contain evidence of inorganic materials associated with Aboriginal use – mainly stone. Further

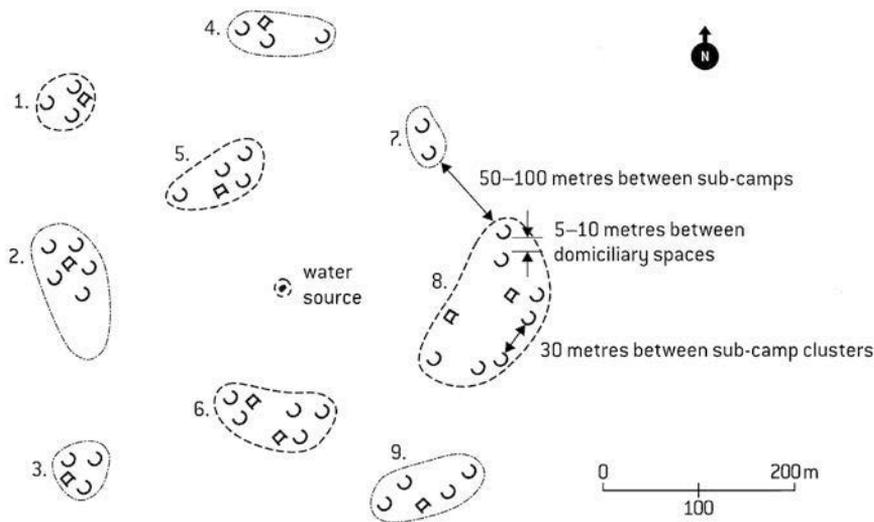


Figure 3: Hypothetical model of a camp layout. In this example, sub-camps with domiciliary areas are numbered 1 to 9. Taken from Memmott 2007: 121.

taphonomic effects, such as bioturbation (plant and animal impacts on soil horizons), can mix the stratigraphy of a site, rendering interpretation of the time-based layering of archaeological materials difficult to impossible. However, for sites that retain their horizontal spatial integrity the careful archaeological recovery of materials is able to provide evidence for artefact distribution across a camping location. The difficulty lies in interpreting long-term Aboriginal activity overprinting of occupation events (that is, repeated use of an area at different time points, without the burial of evidence in distinct stratigraphic layers), determining the number of use events, and potentially the function of different areas according to differing characteristics in stone materials. This analysis necessitates moving beyond tier 1 measurement of stone objects into tiers 2 and 3.

Locations which retain a greater extent of evidence relating to Aboriginal use – including cooking pits, hearths, baked clay balls or heat retainers, shell, bone and other refuse contained in stratigraphical sequences – can be interpreted with greater confidence. The patterning of these materials immediately adds complexity to our interpretation of the area, where both changes and similarities over time, coupled with absence and presence of materials provides evidence for traditions.

Patterns within the archaeological data may be related to Aboriginal traditions. The extent of evidence generates a physical and theoretical boundary, because locations without evidence can be examined to address specific research questions. For instance, when Aboriginal people chose a location for habitation, the place and its boundaries may provide evidence for particular traditions. The set out and spacing between sub-camps (Figure 3) provides evidence for Aboriginal traditions and possibly law. Inside a domiciliary space, the patterning of evidence can point to distinct activity areas – stone evidence may be recovered from one location, whilst hearths or ovens used for cooking are situated in a different space. Questioning the archaeological data through tiers 2 and 3 may allow for the intangible cultural meanings of site use to be examined: How were the domiciliary spaces arranged and what interpretation can be drawn about domestic activities or gender-based traditions? Were shelters located in any relationship to the stone material? Has a clearance activity occurred inside a domiciliary area? What was the range of functional uses for the space? If the site is stratified, how long have the restrictions on the use of space been applied? What does this mean for Aboriginal memory of place and continuance of tradition?

Application within an Archaeological Context

East Leppington – Archaeological Excavations

East Leppington is located in Sydney's southwest, 10km north of Campbelltown. Between 2011 and 2013, archaeological heritage assessment, test and salvage excavations were undertaken on behalf of the NSW Department of Planning and Stockland Development prior to residential development. Cultural landscape assessment and archaeological test excavation (Owen 2012), described a cultural landscape with certain locations possessing high-value Aboriginal archaeological deposits, and a significant hilltop with Aboriginal social values. Following the Burra Charter process, some significant places and values were incorporated into the proposed urban design, conserving and preserving (Burra Charter 2013: Articles 1.4 and 1.6) these places and values for future generations.

Between June and September 2013, archaeological salvage excavation recovered deposits from locations which were to be impacted by development (Owen 2015). All archaeological works were directed by the author and approved by the NSW Office of Environment and Heritage (OEH), with an Aboriginal Heritage Impact Permit obtained under Section 90 of the NPW Act. The salvage excavations focused on 12 spatially distinct locations, hand excavating a surface area of 487m², and resulted in the recovery of 7,533 cultural stone objects. Twelve ground ovens and numerous hearths (fire places) were identified and excavated; these types of sites are rarely recorded in the Sydney region.

The Aboriginal Cultural Landscape

The Aboriginal cultural landscape was comprised of low rolling hills overlooked by higher hills in the east, with expansive views to the Blue Mountains (24km away) and Sydney Harbour (38km away). Traversing the low hills a fourth-order creek (a regularly flowing water course) incised a series of raised alluvial terrace flats which contained stratified evidence of repeated long-term Aboriginal occupation. Optically Stimulated Luminescence (OSL), Thermoluminescence (TL) and radiocarbon dating suggested that Aboriginal people had occupied this landscape over the past 11,000 years, with a particular intensity of activity in the last 1,500 years.

Two of the 12 excavation areas – a camping area (one of the numerous domestic or domiciliary areas adjacent to the creek), and a possible ceremonial area (visually separated by rolling low hills from the domestic areas adjacent to the creek, and positioned at the base of the hilltop) – were identified by the Aboriginal community as significant.

A Domiciliary Area

Spatial patterning of archaeological materials adjacent to the wide tree-lined creek indicated that Aboriginal people selected specific locations for their long-term campsites. These locations appeared to have been occupied time and time again, possibly over hundreds or thousands of years. The deliberate selection of locations adjacent to Bonds Creek was evidenced by an absence of archaeological materials between the locations with dense deposits; spacing of 50 to 100m existed between 'sub-camp' locations (following the Memmott model in Figure 3).

Located on one of the alluvial terraces was a barely perceptible natural alluvial mound, raised approximately 0.5m above the surrounding alluvial soil landscape (named Area 3, Figure 4). Archaeological deposits were identified on this landform during test excavation; the



Figure 4: Trench 3A. Archaeologists start to excavate a trench on the alluvial terrace adjacent to the creek (background).

archaeological deposits were spatially constrained to the terrace, ceasing near the edge of the terrace.

On this terrace, four main trenches were stratigraphically hand excavated; these were linked by connecting strip trenches to assess the continuity of archaeological deposits between the main trenches. The location of the trenches allowed for the investigation of the identified archaeological deposits and the spaces between the archaeological deposits; the zones of 'absence'. The evidence recovered suggested that four locations, 15 to 20m apart, had been repeatedly selected for making and maintaining stone artefacts. Stone artefacts were recovered from the upper three stratigraphical layers. The fourth, lowest stratigraphical layer was generally devoid of cultural lithics, providing evidence for the accumulation of alluvial horizons before the use of this place by Aboriginal people. Outside of the three locations the density of stone objects dropped significantly. The horizontal and vertical stratigraphical context of the stone deposits,

coupled with a general absence of stone material outside the four locations, indicated that within the bounds of this sub-camp stone working was spatially constrained. Maintenance of stone working for thousands of years in the same locations, suggested a tradition passed from generation to generation, which denoted that stone could only be worked in these fixed spaces.

The fifth area, separated by 10m from the nearest stone working area, provided evidence for the subsistence activities in the sub-camp. Multiple fires, hearths and two ground ovens were identified and stratigraphically excavated to reveal a series of overlapping hearths (Figure



Figure 5: Trench 3C. The blackened remains of carbon from Aboriginal fireplaces used for cooking. The test pit was located in the central square.

5). Around and between these features was a low density of stone material, presumably connected to the use of the hearths and ovens. Soil residue analysis has confirmed that meat was being cooked in the ground ovens.

The archaeological evidence suggested that this terrace was used repeatedly over a long period of time and that occupation was spatially controlled – there were distinct zones for stone-working and cooking. The absence of cultural material between these zones suggested that activities that did not leave an archaeological signature could have been allocated specific space on the terrace.

A Possible 'Ceremonial' Area

One landform was nestled into the base of the higher hills, hidden from view of the domestic areas along the creek. Excavation in this area presented evidence for a different type of archaeology, and evidence for a traditional or possibly ceremonial area.

The range of stone materials, coupled with the types of objects being made, was both unusual and unexpected. Nearly 2,000 stone artefacts were recovered from the three stratigraphical layers excavated. All three layers yielded 'backed' artefacts, which stone analysts believe were generally produced between 4,000 to 1,000 years ago (Hiscock 1994, 2006). However, Aboriginal people made these objects from mudstone (49%) and fine-grained silcrete (44%), which is unusual because mudstone was used in greatest quantities in the Pleistocene and early Holocene (that is before 4,000 BP). One trench contained 53 chalcedony (the highest quality stone material) artefacts; this was 58 per cent of all chalcedony recovered during the entire excavation.

The distinct difference in the stone assemblage in this area, coupled with other excavated archaeological evidence and the landscape context, allow some inference that the higher hills

and associated landforms were of great importance to Aboriginal people for a long period of time in association with non-domestic activities.

Evidence for some change in the Aboriginal use of this area was observed through the radiocarbon dates obtained from the limited number of hearths and fire places in the area. Five radiocarbon dates for five distinct features all returned dates between 925 to 190BP (± 40 , 2sd). This period is generally referred to as the late Holocene, a period when backed stone artefacts cease being made and potentially significant changes in Aboriginal society occurred (Lourandos 1997: 300-307).

The investigation of local networks surrounding the procurement and manufacture of stone objects in this area indicated a different system to those associated with the domestic landscape. The range and type of stone materials alluded to Aboriginal traditions that cannot be associated with domestic activity, and that were possibly related to traditions or ceremony.

Interpretation Through the Models

Contextualising the outcomes of excavation, it was apparent that intra and inter site archaeological patterns resulting from long-term Aboriginal habitation were present as complex signatures. Interpretation of the data using the two models resulted in the demarcation of domiciliary, and possibly ceremonial or traditional areas, where laws and tradition governed the mechanisms and routines of use.

Tier 1 interpretation of the space provides evidence for stone working and cooking. Analysis of the stone material indicated a stratified assemblage of a range of stone materials and objects, indicative of some manufacture, maintenance and use. Evidence for cooking was identified, and dated using radiocarbon analysis. Inference of how Aboriginal people occupied the landscape over millennia was absent from this level of interpretation.

Tier 2 interpretations constructed networks around the domiciliary spaces on the terrace, examining the context of the local economy in terms of domestic output. An examination of the procurement strategies for stone materials provided evidence for an unusual mixture in material types, indicative of long-range procurement, outside the parameters of other nearby excavations. The inference was that non-local individuals had been visiting this location.

Food collection and processing networks were theorised based on notions that longer-term occupation would have resulted in a need for reliable food sources. The use of ground ovens illustrated the need to cook larger animals, and perhaps quantities of carbohydrate-rich foods, for larger groups of people. GIS modelling of the study area indicated a probable summer-time occupation due to very low lux (light) levels in winter combined with freezing fogs that would have clung to landforms adjacent to the creek.

Whilst these interpretations are detailed and provide a rigorous understanding of the landscape, they do not present reasons for the differences in archaeological deposits between the two example areas. Tier 3 understanding takes the networks and provides descriptions of local Aboriginal traditions, based on the available data.

It was suggested that the local landscape was deliberately selected for repeated use by Aboriginal people over thousands of years. Oral tradition defined that this location was important, usable and suitable for occupation by large numbers of people. The local traditions were specific enough to define precise locations that could be occupied and how the locations were to be occupied on each visit. The use of space in the domestic areas appears to have been fixed and did not substantially change over time, apart from the advent of use of ground ovens in the last 1,000 years.

The domiciliary spaces were delineated, with functional zones for stone working and cooking. Use of these areas would have been supplemented by other activities, with these locations also used for shelters, windbreaks, dancing areas etc. An analysis of the spatial patterning of archaeological data, including mapping locations without data (the archaeology of absence), has defined the boundary of usable space in each sub-camp, and provided evidence for sub-camp spacing, following Memmott (2007). Further investigations into habitation size could

be connected with the range of stone materials to possibly infer the size of groups in each sub-camp, and potentially identify whether any sub-camps were occupied by non-local groups.

It was inferred that the long-term use of sub-camps and their domiciliary spaces was potentially connected to social, spiritual or ceremonial use of the land adjacent to the hills. A traditional, non-habitation function for the hills could have required Aboriginal people to inhabit this landscape for extended periods. Consequently this may have resulted in Aboriginal people selecting suitable nearby places, in close proximity to each other but visually separated, which provided the best combination of shelter and resources (food and water). Some evidence has been forthcoming for the changing use of the possible ceremonial or traditional area over time, with the introduction of ground ovens, hearths and other features in the last 1,000 years. However, for the middle to late Holocene period, the stratified stone evidence sets this zone apart from all other excavation areas in East Leppington, as well as other sites in the region.

Implications for Heritage Management

The archaeological interpretation of East Leppington's cultural landscape has provided evidence to suggest Aboriginal people occupied this place for thousands of years, returning to the same camping locations and, perhaps, use of a particular location for non-subsistence activities. Such long-term traditions became ingrained in local Aboriginal knowledge of Country, defining spaces, places, routes and modes of habitation.

During the investigations the Aboriginal community identified aspects of local cultural knowledge, indicating that the higher hills held an importance under their tradition. Understanding of the importance of this landscape was consequently added to by archaeological excavations. This process allowed the Aboriginal community time to reconnect to this place and develop a sense of why the landscape had been important to their ancestors. During the initial assessment the intangible cultural heritage aspects of the place were given equal weight to the tangible heritage. This led the hilltops to be conserved within an environmental planning zone for the benefit of future generations.

The two models proposed have been used to contextualise base archaeological data and present hypothetical models for site use, occupation, understanding and values. Whilst the third-tier interpretation included hypothesis, it also allowed the presentation of a narrative derived from the archaeological data which was not only plausible, but which also allowed the local Aboriginal community to reconnect with this place and their ancestors. It provided a means of verbalising the phenomenological appreciation the Aboriginal community had of this location and underpinned the need for heritage conservation of a portion of the landscape during the development process.

Application of the models provides a mechanism to address many of the issues identified by the Australia ICOMOS Practice Note (2013). The interpretation frameworks permit archaeological interpretation that moves into the intangible heritage of Aboriginal culture. This allows a practitioner to approach social values assessments (Byrne et al 2001) and to make the archaeological information relevant to Aboriginal people and communities (Byrne 2003; Byrne & Nugent 2004; Harrison 2004b). Allowing for an understanding and ultimately the appropriate management of holistic archaeological landscapes, along with their places, sites, objects and all aspects that do not have a physical presence, but are connected by and through Aboriginal traditions, is the aim of government policy, such as the OEH Guide 2010.

Discussions with Aboriginal communities makes it apparent that the approach used in this case study allowed them to articulate why certain locations hold certain values and to better define boundaries around significant places and sites within their wider cultural landscapes. It is hoped that further application of the proposed methodology will result in the future conservation of Aboriginal heritage values, thus allowing heritage practitioners to adhere to the aim and spirit of the Burra Charter process.

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