Rock Art Research **2021** - *Volume 38, Number 1, pp. 48-58. E. MILLER*

KEYWORDS: ***Fibre objects – Rock art – Archaeology – Ethnography – Arnhem Land – Australia***

FINDING FIBRE IN THE ROCK ART AND ETHNOGRAPHY OF WESTERN ARNHEM LAND, NORTHERN AUSTRALIA

Emily Miller

Abstract. This paper discusses the complexities of the place of fibre objects in rock art research globally and presents a local Indigenous perspective on fibre in rock art from western Arnhem Land (Northern Territory, Australia). The case studies use multiple strands of evidence, including rock art imagery, ethnographic data and museum collections. The findings show that the rock art contains depictions of fibre objects that have various culturally important roles and are indicators for ceremonial practices, and that these practices were taking place long into the past as well as recently. It highlights that depictions of fibre objects are deserving of a greater focus in rock art research in Australia and other parts of the world.

Introduction

This article argues for the significance of fibre objects in the deep cultural history of humankind.

Figure 1. *Map showing Kakadu National Park and Oenpelli (Map by S. K. May).*

It provides a short global overview of fibre objects within archaeology, and ethnography as well as within rock art research. The article also presents three ethnographic case studies of fibre objects in rock art from my ongoing PhD research which is part of a larger rock art project in Kakadu National Park (henceforth Kakadu), Australia (Fig. 1).

The first part of the article presents a short global overview of the significance of fibre objects in archaeology in general, before discussing their place in rock art research. This overview highlights the fact that there has been limited research on fibre objects in archaeology, ethnography and rock art research, despite their cultural importance. Where there has been research, it is often only from one perspective, either through archaeology or ethnography. The exceptions to this are discussed as part of the overview below.

The second part of this article aims to show how ethnography and rock art can be combined to explore the long-term history as well as the recent significance of the layered meanings of fibre objects. To do this I present three case studies of rock art motifs from western Arnhem Land that are informed by archaeology and ethnography in different ways. The first case study shows the link between ceremonial objects as depicted in the rock art and described in the ethnographic texts. The second shows the way that rock art as an archaeological artefact indicates the changes in fibre object use over time, with objects depicted that do not have an ethnographic equivalent. It also shows that fibre object depictions are part of a wider cultural practice of layered meanings in art. The third case study looks at the place of fibre objects in the belief systems of western Arnhem Land, as documented in both the rock art and the ethnographic research.

The significance of fibre objects: archaeological perspectives

Globally, fibre objects, such as string, bags, baskets and other pieces of personal adornment, are rarely a focus within archaeological research, yet they are often recognised as vital tools for everyday activity throughout the past as well in the present (Hardy 2008). For example, Balme (2013) argues that string would have been necessary for the arrival of the first peoples in Australia some 60 to 65 thousand years ago. Without string, or cordage, how would people have tied things together? And without bags and baskets to carry other tools or food, people would have been far less mobile.

While animal products such as skins and sinew are also used for bags and cordage in some areas, the focus here is on the significance of plant fibre-based objects. Such objects are only preserved in rare circumstances, therefore, studying early examples of fibre objects is difficult. In European contexts, impressions of string and matting have been found on clay objects from Palaeolithic times (Hardy 2008). Soffer et al. (2000), for instance, argue that the accoutrements on the so-called 'Venus' figurines are representations of fibre objects. With improved excavation and analysis, earlier examples of cord are being found in excavations in Europe. The most recent find being a piece attached to a stone flake from the Abri du Maras, dating to between 41 ± 2 ka, 46 ± 5 ka to 52 ± 2 ka, and believed to have been made by Neanderthals (Hardy et al. 2020).

North American archaeological sites have more basketry and fibre present in excavations, so much so that two different instructional books were developed on how to identify and record the technical aspects of these artefacts (Adovasio 2016; Wendrich 1991). As well as the archaeological finds, North America has also proved to have a long history of collecting fibre objects, or basketry as Adovasio (2016) calls them, for museum collections. The first publication of this dates back to 1904 with O. T. Mason's book *Aboriginal American basketry*. These publications are very focused on the technical aspects of basket-making, but other ethnographic research such as Schwarz's work (1997) highlight the importance of baskets and other fibre objects in Navajo beliefs and religious practices.

Ethnographic research from many other parts of the world shows that fibre objects are highly important in various cultures. Guss' (1989) work looks at the place of baskets in Yekuana culture in Venezuela. He states that 'the baskets provided a prism through which the Yekuana universe was reflected' (Guss 1989: 4). In Papua New Guinea (PNG) MacKenzie (1991) found that *Bilum* (string bags) are still highly important and feature in stories about spirit beings, as well as marking male ritual status, and expressing the regional and tribal identity of the maker. Kuchler's work also demonstrates the cultural importance of fibre objects in the Pacific (1999).

From an Australian perspective, fibre objects are only preserved in rare circumstances, partly because 'archaeobotany remains an underdeveloped field of research' (Dilkes-Hall et al. 2020: 309). In northern Australia there are only four known find contexts. Pieces of string that may have been baskets or other fibre objects have been found at Anbangbang (hereafter referred to as Burrungkuy) (Clarke 1985) and at Paribari in western Arnhem Land (Schrire 1982). The pieces of string from Burrungkuy were found in the upper levels of the excavation and were dated to the last 200–1000 years (Jones 1985: 298). The fibre pieces from Paribari were found in the upper level but are undated and are not a focus of Schrire's analysis (1982). The other finds originate from Riwi and Carpenters Gap in the Kimberley (Dilkes-Hall et al. 2020; Dilkes-Hall et al. 2019; Maloney et al. 2018). The Kimberley fibres are up to 7600 BP years old (Dilkes-Hall et al. 2020; Dilkes-Hall et al. 2019; Maloney et al. 2018). That said, Dilkes-Hall suggests that macrobotanical finds of *Triodia* (speargrass) in the earliest phase of the Capenter's Gap site could be evidence of fibre technology being used as far back as 51 000 – 38 000 cal BP (Dilkes-Hall et al. 2019: 41), but these finds are not of actual pieces of string.

As there have been few finds of fibre in the archaeological excavations in northern Australia, and the ones that do exist are of small pieces of string and are only from the last 7000 years BP, or so, the rock art of western Arnhem Land is the best source of information available for discussing the significance of fibre objects for Indigenous people in the area in the deep past. Veth et al. (2018) argue for a similar case for rock art in the Kimberley region of northern Australia.

Fibre objects in international rock art research

So far, these insights from the archaeological and ethnographic works on the significance of fibre objects have not really connected with rock art research. A review of the literature suggests that there are parts of the world where there are limited depictions of fibre objects, some of which do not entirely fit the definition used in this research — such as the possible engraved capes in Sweden (Goldhahn 2005) or the engraved 'weaving looms' at Valcamonica in Italy (Anati 2009). In other areas it is difficult to identify what the objects represented in the rock art were originally made of as ethnographic objects have not been connected to them. This is the case for bags depicted in the Iberian rock art (Domingo Sanz et al. 2003, Domingo Sanz 2016), as well as the tassels, skirts and breast covers depicted in the rock art of Saudi Arabia (Betts 2001: 795). In southern African rock art, there are a number of depictions of 'bags' and 'aprons' which have been to be connected to 'trance or hunting scenes' (Casimiro Pinto 2014; Cooke 1961; Garlake 1994, 1987; Hampson et. al. 2002; Lewis-Williams 1987; Lewis-Williams and Pearce 2012; McCall 2010; Parkington and Manhire 2003; Summers 1959; Yates et. al. 1985), the physical equivalents of the objects, however, appear to have been made of animal skin rather than plant fibre (Schoonraad 1965; Viestad 2018). Interestingly, fibre objects have not

been commonly recorded in North American rock art. The exception being Hays-Gilpin et al. (1992) and Schaafsma (2016), who discuss the depictions of sandal treads in Pueblo and Basketmaker rock art. Both studies suggest that sandals, a type of fibre object, had some connotation of spiritual power. In a similar vein, depictions of fishing nets in the Lesotho Highlands area are suggested to have connections to rainmaking (Challis et al. 2008). Also, in Malaysia, depictions of mats and baskets are said to be connected to the creation story for the area (Saidin and Taçon 2011).

Some depictions of what can be termed practical or utilitarian fibre objects have also been documented, such as 'rope' in the rock art of Jordan (Alzoubi et. al. 2016), and in the rock art of Chile (Niemeyer Fernandez and Ballereau 2004; Sepúlveda 2011; Vilches and Cabello 2011). Fishing net motifs have been documented in Venezuela (Williams 1985), Italy (Anati 2014), and Easter Island (Lee 1992). Other examples include 'hunting enclosures' in archaic North American rock art (Sundstrom 1989) and 'baskets' in parts of India (Allchin 1987; Chakraverty 2009; Neumayer 2013: 86, 100; Chakraverty and Banerjee 2015; Nihildas 2014). It may be that these depictions had more complex meanings to the artists but without ethnographic research this remains unknown.

Informed and formal methods in rock art research

Archaeological understandings of the significance of fibre objects are drawn from both anthropological and ethnographical accounts as well as finds from excavations. Australian rock art researchers are fortunate to be able to combine these strands of evidence, and explore these concepts using both *informed methods*, where the research depends on insight from those who made or used the rock art (Taçon and Chippindale 1998: 6). As well as *formal methods* where no direct insight is available, and the information is 'restricted to that which is immanent in the images themselves' (Taçon and Chippindale 1998: 6–7). Taçon and Chippindale (1998: 8) state that formal methods can be used even where there is informed knowledge, which can mean that the researcher separates the art from its cultural meaning.

While this discussion has proved useful for many researchers, recent critique has come from Jones and Díaz-Guardamino (2017) for the distinct separation of the two methods, which they state make formal methods into the 'pale underside' of the two methodologies. While the discussion is around the problematic nature of the dichotomies, Jones and Díaz-Guardamino (2017) focus on the centring of formal methods, with some additions of ethnographic data, and argue that the meanings of rock art can be revealed and produced through making. They also argue that researchers should not 'impose indigenous ontological categories on bodies of rock art imagery' as it can produce 'coarse-grained knowledge of rock art traditions' (Jones and Díaz-Guardamino 2017: 12). If a researcher is applying ethnographic information from one culture to an assemblage of rock art of another place, this may be true, but not when working in an Indigenous context. For example, Brady and Bradley demonstrate that the meaning of rock art for Indigenous people, such as the Yanyuwa, is 'derived from the intimate and complex relationships involving people, country, spirits and the Dreaming' (Brady and Bradley 2016), so the rock art still has meaning for the community today. In this context David and McNiven (2017) argue that ethnographic research is important for revealing the 'layered and hidden meanings and polyvocality of rock art' (2017: 10). This echoes Taçon's (1989a, 1989b) work on so-called x-ray fish depictions in western Arnhem Land, which showed that these images are also representations of stories connected to ancestral beings.

The division of informed and formal methods has clearly created debate. In reality, both systematic or *formal* and *informed* methods such as ethnography and ethnohistory can be used together. Taçon and Chippindale do state that formal methods can be used on rock art when informed knowledge is available (1998) but this should be done in a way that works with the informed knowledge, not separately from it. In this paper the formal analysis of the rock art highlights that the depictions in question are not limited to one time period or style of rock art, and the ethnography shows the cultural importance of both the rock art and fibre objects. If only one of the two approaches was used, the picture of fibre objects as an important cultural items that have been made and used for a long time period would be incomplete: the *formal methods* highlight the prevalence of fibre objects in the rock art, and the *informed methods* and perspectives improves the understanding of both the depictions of fibre objects as well as the cultural importance of contemporary fibre objects.

In this context it is important to view fibre objects, in this case items woven from plant fibre (e.g. pandanus, *Pandanus spiralis,* and banyan tree bark, *Ficus virens*) including items such as bags, armbands and headdresses, in line with recent ethnographic research on the meaning of art in western Arnhem Land. These studies have demonstrated that artworks have multiple layered meanings. This concept is described by Taylor (1996) as the inside/outside nature of bark paintings and other art objects in western Arnhem Land. According to Taylor the Kunwinjku people of western Arnhem Land control the access to knowledge of the ancestral world through a model where knowledge is referred to as 'inside' or 'outside' knowledge (Taylor 1996: 10). The Kunwinjku term *kun-yarlang* refers to the outside/public meaning of things, while *mandjamun* refers to restricted/inside meanings, which can also be sacred or secret. These meanings are encoded in the art, and the meanings taught to younger artists over time as part of an apprenticeship system (Taylor 1996: 10–11).

Unlike bark paintings, there has been little discussion of the cultural complexities of fibre objects

in western Arnhem land, thus this article is a starting point to explore the various ways fibre objects were made meaningful in the past as well as in the present.

Ethnographic research on fibre objects in western Arnhem Land

The oldest account of Aboriginal fibre objects found during my research comes from Foelsche, Darwin's first police inspector. In 1882, he published photographs of Aboriginal people and provided some very basic descriptions of some cultural practices (Foelsche 1882). These descriptions are rather general but do provide some information on the types of body ornaments people wore, most of them made from plant fibre, as well as an early version of the creation story that features baskets which will be discussed later in this paper. Other early documents come from the missionaries who started the short-lived Kaparlgoo Mission on the South Alligator River. Lennox and Gathercole collected objects from the community around the mission and wrote down the language names for them to sell in sets to various collectors (Australian Museum Archives: AMS9; N1901/28; Jones 2005).

The first anthropological account comes from Baldwin Spencer. In 1914 he published *Tribes of the Northern Territory*, a volume that describes Aboriginal life in Oenpelli (now Gunbalanya), which he visited in 1912. In his book he discusses a number of fibre objects, such as bags, baskets and other items of personal adornment. He created a typology of fibre objects based on their shape and the materials they were made from (Spencer 1914: 378–398) but does not discuss them as objects with an important place in Indigenous culture. Examples of the objects he discusses were collected for him by Paddy Cahill and are now part of Museum Victoria's collection.

In the 1930s and 1940s, Elkin published and updated several texts on traditional Aboriginal cultures. He described some ceremonies from western Arnhem Land in detail and focused on recording Aboriginal culture 'before it died out'. Later publications by Elkin (1972, 1977, 1979) mention some fibre objects from western Arnhem Land, particularly their use in ceremonies, but again, he does not delve into a deep discussion or even full description of the objects or their cultural significance.

Things started to change in the 1940 and 1950s when Ronald and Catherine Berndt published a number of texts on Indigenous culture in Arnhem Land (e.g. Berndt and Berndt 1951, 1970, 1989). The aim now changed to developing a more complete understanding of Indigenous culture and so they recorded creation and other cultural stories, ceremonies, as well as everyday life. Some of their work was done separately so they could work with both male and female informants, which greatly improved knowledge about female life-worlds. The Berndts recorded stories that include fibre objects, describing both everyday uses and more spiritual aspects of them, revealing that these objects were an integral part of life in the area (Berndt and Berndt 1970). However, the Berndts did not provide much detailed description of specific objects. Rather they simply mention that there were fibre objects used in ceremony.

The most recent phase of ethnographic research in the region focusing exclusively on fibre-based art practices comes from Louise Hamby (2005, 2007, 2011). Her anthology *Twined together* (Hamby 2005) reveals the place of baskets and fibre in the life of Indigenous men and women in western Arnhem Land. The anthology also looks at the development of some basket-making techniques that may have been influenced by the missionaries. One chapter in the book, *Some baskets are special ones* (May and Murphy 2005), does mention some of the cultural importance of the objects, such as in the story of Yingarna, which will be discussed later in this article.

As part of my PhD research I have been conducting my own enquiries into change and continuity in fibre-object making with the community in Gunbalanya, where the art centre is a focal point for artists who still make fibre objects. It is clear that communities have worked hard to maintain cultural beliefs and practices in whatever way possible, as well as adapting to deal with the harsh conditions colonial Australia has imposed on them. Artists have also developed new forms of fibre art to continue telling important stories. This continuation and adaptation of cultural practices through time means that it is still possible to gain some understanding of the depictions of fibre objects in rock art, as well as changes that have occurred due to colonisation.

Rock art in western Arnhem Land, northern Australia

Western Arnhem Land in the north of Australia has one of the highest concentrations of rock art in the world. My own research has focused on the Burrungkuy area within Kakadu. The research area includes the well-known rock art sites at Nanguluwurr and Burrungkuy. Parts of Djok Country were previously part of the Warramal clan estate. This clan ceased to exist in the mid to late 1900s so neighbouring clans including Djok are now in a custodial role for the area (Chaloupka 1982: 15–16; May et al. 2019: 200; May et al. 2020).

Early archaeological work in the area was conducted by Kamminga and Allen (1973) and Jones (1985) which included the finds of fibre pieces in the upper levels of the excavation, as discussed earlier. Much of the rock art research included Djok country (e.g. Lewis 1988; Chaloupka 1978; Edwards 1979; Taçon 1989b), with a focus on the 'Main Gallery' at Burrungkuy as well as Nanguluwurr, both sites which have recent rock art from the 1960s as well as much older rock art. These sites have been on the tourist route for a long time, but their cultural significance is discussed by Chaloupka (1982) and more recently by May et al. (2019). The advantage of this intensive rock art research is that there

Figure 2. *Example of a biting bag from the Australian Museum, Sydney (E010317) with PERAHU scale for size reference (photograph by EM).*

is now a wealth of data for these sites, but there are also many sites that are only being documented now. Recent publications have looked in detail at the rock art depicted in the 'Main Gallery' (May et al. 2020) as well as the oral histories for this site (May et al. 2019).

Fibre objects in the rock art of Kakadu and Djok Country

As indicated, fibre objects have not been the focus in previous rock art research in western Arnhem Land. Chaloupka and Giuliani (2005) were the first researchers to provide a short summary of the appearance of baskets in rock art, stating that they were first depicted in the dynamic figure style, which they suggest to be 20 000 years old. They also describe how the depictions of baskets change with the developing styles of rock art. Two recent theses have included fibre objects in their research. Hayward (2016) looked at fibre objects as part of the material culture set for the rock art of Mirarr country, while my honours thesis focussed on depictions of bags and baskets from the same area (Miller 2016).

Earlier rock art research in Djok Country documented many depictions of fibre objects (i.e. Chaloupka 1979, 1982, 1993; Edwards 1979; Taçon 1989b; May et al. 2019, 2020), but these depictions have not been a direct focus for analysis, until now. While the survey work in Djok country will be continued in the future, at present, I have identified and classified 308 depictions of fibre objects in the rock art that has been documented as part of the 'Pathways: people, landscape, and rock art in Djok Country' project. These include 101 depictions of bags or baskets, 112 depictions of headdresses and 95 depictions of other fibre objects. Instead of presenting an overview of this assemblage, and aiming to demonstrate the benefit of combining formal and informed perspectives in an attempt to unfold the meaning and significance of fibre objects in rock art I present three case studies.

Figure 3. *Photograph of young Aboriginal man from Arnhem Land, wearing a power/biting bag. Photograph by Paul Foelsche, provided by NT Archives; http://hdl.handle.net/10070/821.*

Case study one: ceremonial objects

This first case study looks at a type of string bag that is depicted in the rock art and can be identified as an important ceremonial object from the ethnographic texts. The example below is one of six depictions identified in the Djok Country rock art dataset. The bag is the elongated shape that appears to be below the head of the anthropomorph on its front. Identifying these bags relies on understanding the way they are worn according to the ethnographic record — on the chest. The shape and size of the bag in the rock art can vary slightly, they are either small and round, more like the museum example in Figure 2 and the ethnographic photo (Fig. 3) or elongated as in the rock art motif (Fig. 4).

These bags are known ethnographically as biting/power bags (Spencer 1914; Thomson 1961; Elkin 1972), are of different shapes and sizes and are worn by men on the head or chest and held in the mouth during ceremony or when fighting. The first description of these bags comes from Baldwin Spencer where he describes them as small, spherical, knitted bags with a

string long enough for the bag to be held in the mouth called a '*Ballduck*' (Spencer 1914: 389, Fig. 2). According to Spencer: 'during fights and ceremonies when the men get excited one of the first things they do is to put the bag between their teeth and bite it hard' (1914: 389). The contents of these bags varies. Spencer states that they contain 'little odds and ends, perhaps a cutting flake or piece of resin' (1914: 389). Thomson (1961: 101) describes the stone from a biting bag being used in a magic practice, so the objects contained in the bag, as well as the bag itself are powerful.

Both Elkin and the Berndts documented the use of biting bags in ceremonies. In his descriptions of ceremonies from 1972 Elkin mentions that three to four men involved in the Maraian ceremony wear power bags or baskets (Elkin 1972: 263–267). Elkin also describes the power baskets as 'closely woven grass baskets about 12 inches long from which feather-decorated hair strings hang and in which the relics of past leaders are kept' (Elkin 1972: 265). Elkin's description of the power bag differs from the ones provided by Spencer and Thomson, which suggests different types of biting/power bags for different uses, long tightly woven ones for ceremony (Elkin 1972) and small round ones for personal wear (Spencer 1914) and magic (Thomson 1961). The Berndts also mention that there are types of bags for 'clenching between the teeth in fighting, or holding sacred material; some are decorated with ochre or feathers' (Berndt and Berndt 1970: 39, illustration facing page 102). The use of baskets to hold special objects for ceremony is also mentioned (Berndt and Berndt 1970: 137). Hamby (2011) describes these biting/power bags and discusses museum collection examples that came from Millingimbi in eastern Arnhem Land, showing that variations of the objects were found across Arnhem Land.

The descriptions state that one of the identifying factors for these bags is that they are worn on the front of the body. This location is important for identifying the biting bags in the rock art, as we cannot tell what type of plant fibre they are made from, or what is inside them. Depictions of these can be found in the rock art of Djok country, such as Figure 4. The bag is worn on the chest and is close to the head, unlike larger baskets that are often depicted as worn on the back, and are larger and lower down on the figure. Thus, ethnography is used to inform us that the reason for bags being depicted on the front of a figure, or on its head, is because it is a specific type of bag. The shape of the bag in Figure 4 suggests that it is more like Elkin's (1972) description of a power basket.

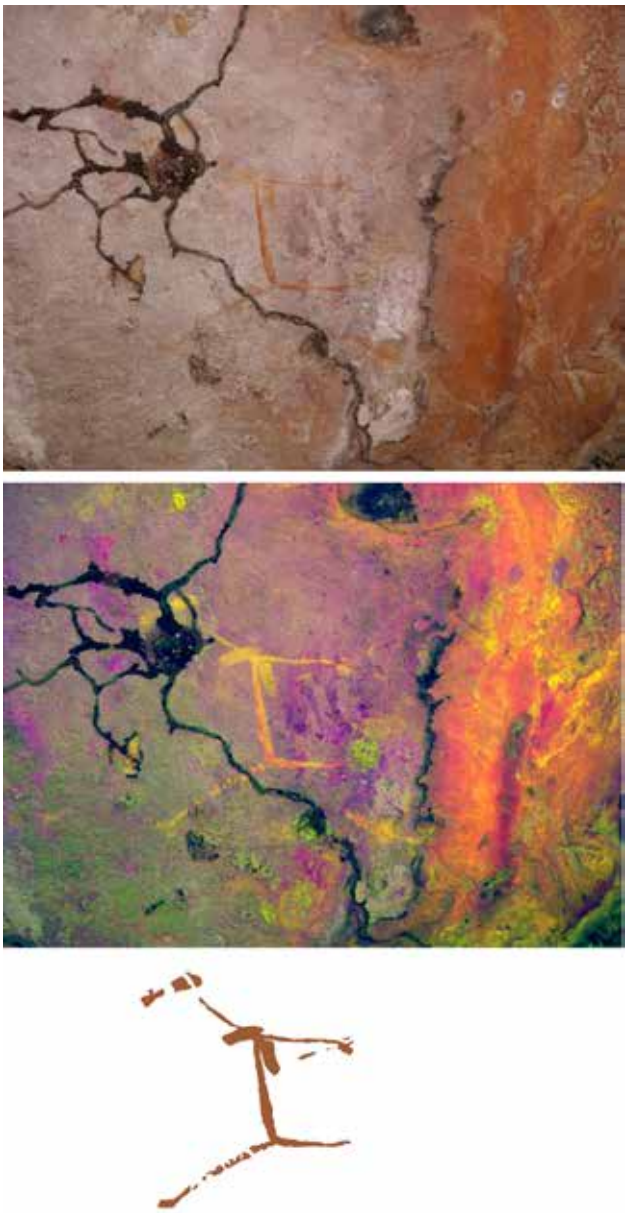

Figure 4. *Anthropomorph wearing power bag and holding spearthrower. (A) Original photograph, (B) same photograph with D-stretch YBK enhancement and cropped (photograph from 'Pathways: people, landscape, and rock art in Djok Country' project), (C) tracing by EM.*

Case study two: different depictions

The second case study examines the different depictions of fibre objects that have occurred through time and why these variations may occur. This case study focuses on the single depiction of a 'fish-shaped' bag with a zigzag handle that has been identified in the rock art of Djok country (Fig. 5). While this type of bag is rare, four other examples were documented in Mirarr Country rock art by Miller (2016).

Mountford (1956: 183) and Lewis (1988) describe similar-shaped bags depicted in the rock art as "'sacred bags' that only men could use" (Lewis 1988: 62). The zigzag handle shape is particularly interesting as it is unclear how it would appear in real life. No examples of this type of handle have been found in museum collections or noted in the ethnographic texts from the past by others working in the region, such as Spencer, Elkin or the Berndts. It is possible, then, that people stopped making this bag before researchers began documenting and collecting artefacts. Given the infor-

Figure 5. *Anthropomorph with a 'fish-shaped bag with zigzag handle'. (A) Original photograph, (B) same Pathways: people, landscape, and rock art in Djok Country with D-stretch YBK enhancement (Photo: Pathways: people, landscape, and rock art in Djok Country Project), (C) tracing by EM.*

mation provided by Mountford and Lewis, as well as the practices of encoding layers of information in art as documented by Taylor (1996), there is a possibility that the depiction of the bag is an indicator of some kind of ceremonial practice.

Warner (1958: 262), Welch (1997) and Hayward (2016) all discuss the depiction of an anthropomorph holding a spearthrower from the 'wrong end' as the artist indicating ceremony. Welch (1997) uses the example of spearthrowers being used in public dance to represent digging sticks and being held 'in an unusual way' to show that spearthrowers do not always indicate combat. Hayward (2016: 248) also argues that a rock art scene with spearthrowers being held at the 'wrong end' is an indicator of ceremony, particularly in conjunction with the bags with zigzag handles. The 'wrong end' of the spearthrower in this case is the hooked end where one would normally attach the spear to launch it. Hayward also points out that art, including rock art, can be made to 'allow for a range of interpretations' (2016: 248). This fits with Taylor's (1996) argument that there is an inside and outside interpretation of a bark painting and it is possible that this kind of rock art depiction has another set of meanings that are signalled by the zigzag bag handle, and the unusual way of holding the spearthrower.

In terms of the actual bag there could be many reasons for the changes in types of fibre objects being made in western Arnhem Land. In recent history the missions that were established in the western Arnhem Land area were recorded as discouraging ceremonial practices (Hamby 2005: 61), this may have impacted the creation of objects such as this 'fish-shaped' bag. This could also be a reason for the lack of ethnographic information available, if the making or use of these bags was discouraged early on. It is also possible that these bags have not been made since before colonisation and other factors influenced the change in bag types, or the depiction in the rock art is more about using the bag as an indicator of another layer of meaning.

Case study three: creation story

This case study looks at the place of fibre objects in one of the creation stories of western Arnhem Land, and how it can be depicted in the rock art. The motif (Fig. 6) in this case study comes from Injalak Hill which is located on the outskirts of the town of Gunbalanya in western Arnhem Land. The depiction shows an anthropomorph depicted in red, yellow and white ochre with 15 striped bags attached to it. This figure has been identified as Yingarna by the artists in the community and documented by rock art researchers such as Chaloupka (1993; Chaloupka and Giuliani 2005) and May (May and Murphy 2005). Versions of this figure appear in artworks painted by artists at the arts centre in Gunbalanya even today.

The story of Yingarna, a creation figure for the western Arnhem Land area, has been recorded by many anthropologists, starting with Paul Foelsche in 1882, where she is named 'Warahmoorungee' and is said to have arrived at Port Essington, heavily pregnant and then travelled south and left people in each place she stopped (Foelsche 1882: 17). Spencer (1914) recorded a similar story of the woman 'Imberombera' also arriving at Port Essington while pregnant and wearing a bamboo ring on her head which had bags hanging from it. She travelled to different areas and left children and yams at each spot and told the children what language to speak (Spencer 1914: 276–277). For a short amount of time she travelled with a male called Wuraka who eventually sat down and became Tor Rock, a landmark visible from Injalak Hill. The Berndts also discuss a

creation mother, Waramurungundji (Berndt and Berndt 1970), whose name is more similar to that recorded by Foelsche. Waramurungundji also travelled for a while with a male called Wuragag who again is said to have turned at least part of himself into Tor Rock (Berndt and Berndt 1970).

In May and Murphy (2005), T. Yulidjirri and Jill Nganmirra, two elders from Gunbalanya, both talk about the creation figure who carried the first Bininj (Aboriginal people of the area) in her baskets. Yulidjirri calls this woman Yingarna, and Jill calls her Minyalawuy. These many different versions show the continuing importance of the idea of a female creation figure travelling from the north coast carrying bags and designating land and language to people. Whichever name is used, this figure still shows that baskets are part of the culture from the concept of creation onwards. The depiction of Yingarna on Injalak Hill shows her with the baskets hanging from her head. The direct connection between the story and the depiction of fibre objects clearly shows that they have a place in the oral histories and religious beliefs of people in the area. This also informs that bags depicted in the rock art can be directly connected to these creation and Ancestral stories.

Figure 6. *Depiction of Yingarna on Injalak Hill (photograph by SKM).*

Discussion and conclusion

Fibre objects have been an important part of human history. This is underlined by ethnographic research from around the world that shows that fibre objects are highly culturally important for different groups (e.g. Guss 1989; Kuchler 1999; MacKenzie 1991; Schwarz 1997). Similar insights are yet to be realised within rock art research. These other areas where the cultural importance of fibre objects has been documented do not have a published rock art record that shows depictions of these objects, and archaeological evidence for fibre objects is generally scant. This highlights that this research, which uses rock art as archaeological evidence and combines it with ethnography, is important.

As discussed earlier in this paper, there has been criticism of the division of formal and informed methods of rock art research. With claims that rock art research that uses formal methods is somehow lesser than research that uses informed methods (Jones and Díaz-Guardamino 2017). However, it is important to note that working with Indigenous communities requires a focus on incorporating Indigenous viewpoints (i.e. Buhrich 2017; David and McNiven 2017; May and Domingo Sanz 2010; May et al. 2019). It is also important to note the contemporary importance of rock art sites for Indigenous communities, including the fact that rock art is important for Indigenous people's wellbeing (Brady and Bradley 2016; Taçon 2019).

An aim of this article has been to present three case studies from my PhD research in western Arnhem Land. The goal was to explore how ethnographic and ethnohistorical information can inform the understanding of the cultural importance of fibre objects generally, and, in particular, how this is reflected in the depictions of these objects in the rock art of western Arnhem Land. In this paper the formal process of identifying and counting motifs is intertwined with the information available through both the historical and more current ethnographic research. The ethnographic research informs on types of fibre objects in the rock art, such as the power/biting bags which may not have been identified as specific types without it, as well as the meaning of some motifs, like the image of Yingarna on Injalak Hill.

The first case study shows that there are links between rock art and ceremonial practices, with the type of fibre object depicted in the rock art, the biting bag, an indicator of this. Without the ethnography that states that these smaller bags worn on the chest were used in ceremony, we may assume that it is just a figure wearing a bag for secular use. The second case study shows that there has been change through time. There are no photographs or museum objects that match the bag depicted in the rock art. However, there are signals that this image is connected to ceremonial practice or religious belief with the inclusion of the spearthrower being held at the 'wrong end' (Warner 1958), and the similarity to the bags described as sacred bags by Mountford (1956) and Lewis (1988). This case study demonstrated that an image that includes fibre objects can have layers of meaning. At Injalak arts, the art centre in Gunbalanya, the paintings of ancestral stories made by artists today often still feature bags, and these are included as important factors in the stories attached to the artworks. As Taylor (1996) has shown, these layers of meaning are an important part

of bark painting in western Arnhem Land. In a similar way that Taçon (1989a, 1989b) argues for depictions of fish in the rock art, it is clear that fibre objects also have this function, both in the rock art and in current bark paintings. This is also evident in the fibre sculptures that the artists make today. These objects are sold to tourists but they are also the creations that represent the artists' Dreaming, and as such these objects continue to be more than they appear.

The third case study looks at the depiction of the female creation figure, of various names, who is said to have carried the first people in her baskets. Clearly the inclusion of baskets in this story shows that they are integral to every part of life and belief. Previous research has shown that oral histories can be traced back thousands of years, therefore the presence of fibre objects in stories, as well as the rock art, shows that they have been part of life and culture for Indigenous people in western Arnhem Land for a long time.

This article has argued that fibre objects, particularly baskets, are interwoven in all aspects of life. The rock art, as well as stories such as the creation story, highlight the time depth and significance of these relationships. While fibre objects have rarely been a focus within rock art research in Australia and internationally, this research demonstrates that such objects contain many layers of meaning, and that ethnographic research has a key role to play in better understanding their history and role in society.

Acknowledgments

I would like to thank Jeffrey Lee, Djok Senior Traditional Owner, for allowing me to work on the rock art in his country, as well as Parks Australia. I thank the artists at Injalak Arts for their help, and for teaching me. Many thanks also to my PhD supervisors, Professor Paul S. C. Taçon and Dr Sally K. May for their support and many proofreads. I also thank Professor Joakim Goldhahn for reading a draft of this paper and providing suggestions. Thanks to the 2018 and 2019 field team for their contribution to the rock art surveys. I would also like to thank the *RAR* reviewers for their feedback and suggestions. This research is funded by the Australian Research Council grant 'Australian rock art: history, conservation and Indigenous well-being', part of Paul S. C. Taçon's ARC Laureate Project (FL160100123).

Emily Miller
PERAHU, Griffith Centre for Social and Cultural Research
Griffith University, Gold Coast campus, QLD 4222, Australia
emily.miller@griffithuni.edu.au
ORCID: https://orcid.org/0000-0001-9062-5124

REFERENCES

Adovasio, J. M. 2016. *Basketry technology: a guide to identification and analysis*. Routledge, New York.

Allchin, B. 1987. South Asian rock art. *Journal of the Royal Society of Arts* 135(5366): 138–156.

Alzoubi, M., S. Al-Maani and H. Al-Qudrah 2016. Safaitic inscriptions and possible hunting scenes from the north-eastern Badiya, Jordan. *Rock Art Research* 33(2): 219–228.

Anati, E. 2009. L'art rupestre du Valcamonica: évolution et signification. Une vision panoramique d'après l'état actuel de la recherche. *L'Anthropologie* 113(5): 930–968.

Anati, E. 2014. Valcamonica rock art: state of the art. *BCSP Bollettino del Centro Camuno di Studi Preistorici* 37/38: 7–18.

Australian Museum Archives: AMS9; N1901/28

Balme, J. 2013. Of boats and string: the maritime colonisation of Australia. *Quaternary International* 285: 68–75.

Berndt, R. M. and C. H. Berndt 1951. *Sexual behaviour in western Arnhem Land*. Viking Fund Publications in Anthropology, New York.

Berndt, R. M. and C. H. Berndt 1970. *Man, land & myth in north Australia: the Gunwinggu people*. Ure Smith, Sydney.

Berndt, R. M. and C. H. Berndt 1989. *The speaking land: myth and story in Aboriginal Australia*. Penguin, Ringwood.

Betts, A. V. G. 2001. The Middle East. In D. Whitley (ed.), *Handbook of rock art research*, pp. 786–823. Altamira Press, Walnut Creek.

Brady, L. and J. J. Bradley 2016. 'That painting now is telling us something'. Negotiating and apprehending contemporary meaning in Yanyuwa rock art, northern Australia. In L. Brady and P. S. C. Taçon (eds), *Relating to rock art in the contemporary world: navigating symbolism, meaning and significance*, pp. 83–106. University Press of Colorado, Boulder.

Buhrich, A. 2017. Art and identity: Aboriginal rock art and dendroglyphs of Queensland's Wet Tropics. Unpubl. PhD thesis, James Cook University.

Casimiro Pinto, L. 2014. Contact rock art of the Eastern Cape and third spaces of enunciation. *The South African Archaeological Bulletin* 69: 152–163.

Chakraverty, S. 2009. Interpreting rock art in India: a holistic and cognitive approach. In *XXIII Valcamonica Symposium*, pp. 94-107.

Chakraverty, S. and R. Banerjee 2015. Indian rock art and ethnographic analogy. *Puratattva* 45: 122–131.

Challis, S., P. Mitchell and J. Orton 2008. Fishing in the rain: control of rain-making and aquatic resources at a previously undescribed rock art site in highland Lesotho. *Journal of African Archaeology* 6(2): 203–218.

Chaloupka, G. 1978. Djawumbu-Madjawarnja site complex. Unpubl. report to the Australian Heritage Commission, Canberra.

Chaloupka, G. 1979. Survey of sites of significance: Nourlangie Rock Cultural Area. Unpubl. report for Museum and Art Gallery of the Northern Territory, Darwin.

Chaloupka, G. 1982. *Burrunguy: Nourlangie Rock*. Northart, Darwin.

Chaloupka, G. 1993. *Journey in time: the world's longest continuing art tradition: the 50,000 year story of the Australian Aboriginal rock art of Arnhem Land*. Reed, Chatswood.

Chaloupka, G. and P. Giuliani 2005. Strands of time. In L. Hamby (ed.), *Twined together: Kunmadj Njalehnjaleken*, pp. 3–18. Injalak Arts and Crafts, Gunbalanya.

Clarke, A. 1985 A preliminary archaeobotanical analysis of the Anbangbang I site. In R. Jones (ed.), *Archaeological Research in Kakadu National Park*, pp. 77–96. Australian National Parks and Wildlife Service, Canberra.

Cooke, C. K. 1961 Waterbags in rock-art. *The South African Archaeological Bulletin* 16(61): 23–24.

David, B. and I. J. McNiven 2017 Introduction: towards an archaeology and anthropology of rock art. In B. David and I. J. McNiven (eds), *The Oxford handbook of the archaeology and anthropology of rock art*, pp. 1–24. Oxford University Press, Oxford.

Dilkes-Hall, I. E., S. O'Connor, and J. Balme 2019. Peo-

ple-plant interaction and economic botany over 47,000 years of occupation at Carpenter's Gap 1, south central Kimberley. *Australian Archaeology* 85(1): 30–47.

Dilkes-Hall, I. E., J. Balme, S. O'Connor and E. Dotte-Sarout 2020. Archaeobotany of Aboriginal plant foods during the Holocene at Riwi, south central Kimberley, Western Australia. *Vegetation History and Archaeobotany* 29: 1–17.

Domingo Sanz, I., E. López-Montalvo, V. V. Bonilla, P. M. G. Calatayud and R. M. Valle 2003. Las pinturas rupestres del Cingle del Mas d'en Josep (Tírig, Castelló): consideraciones sobre la territorialización del arte levantino a partir del análisis de las figuras de bóvidos y jabalíes. *SAGVNTVM. Papeles del Laboratorio de Arqueología de Valencia* 35: 9–49.

Domingo Sanz, I. 2016. From the form to the artists: changing identities in Levantine rock art (Spain). In I. Domingo Sanz, D. Fiore and S. K. May (eds), *Archaeologies of art*, pp. 99–130. Left Coast Press. Walnut Creek.

Edwards, R. 1979. *Australian Aboriginal art: the art of the Alligator Rivers region, Northern Territory*. Australian Institute of Aboriginal Studies 15 (new series) Australian Institute of Aboriginal Studies, Canberra.

Elkin, A. P. 1972. *Two rituals in south and central Arnhem Land* (Vol. 19). University of Sydney, Sydney.

Elkin, A. P. 1977. *Aboriginal men of high degree: initiation and sorcery in the world's oldest tradition*. University of Queensland Press, St Lucia.

Elkin, A. P. 1979. *The Australian Aborigines*. Angus & Robertson, Sydney.

Foelsche, P. 1882. Notes on the Aborigines of north Australia. *Transactions and Proceedings and Report of the Royal Society of South Australia* 5(1881/1882): 1–18.

Garlake, P. S. 1987. Themes in the prehistoric art of Zimbabwe. *World Archaeology* 19(2): 178–193.

Garlake, P. S. 1994. Archetypes and attributes: rock paintings in Zimbabwe. *World Archaeology* 25(3): 346–355.

Goldhahn, J. 2005. *Från Sagaholm till Bredarör – hällbildsstudier 2000–2004.* Göteborg University, Gotarc Serie C, Arkeologiska Skrifter 62, Göteborg.

Guss, D. M. 1989. *To weave and sing: art, symbol, and narrative in the South American rain forest.* University of California Press, Berkeley.

Hardy, K. 2008. Prehistoric string theory. How twisted fibres helped to shape the world. *Antiquity* 82(316): 271–280.

Hardy, B. L., M. H. Moncel, C. Kerfant, M. Lebon, L. Bellot-Gurlet and N. Mélard 2020. Direct evidence of Neanderthal fibre technology and its cognitive and behavioral implications. *Scientific Reports* 10(1): 1–9.

Hamby, L. 2005. *Twined together: Kunmadj Njalehnjaleken*. Injalak Arts and Crafts, Gunbalanya.

Hamby, L. 2007. Wrapt with string. *Textile: The Journal of Cloth and Culture* 5(2): 206–229.

Hamby, L. 2011. Held by the teeth: biting bags from Milingimbi. *Journal of Australian Studies* 35(4): 511–527.

Hampson, J., W. Challis, G. Blundell and C. De Rosner 2002. The rock art of Bongani Mountain Lodge and its environs, Mpumalanga Province, South Africa: an introduction to problems of southern African rock-art regions. *The South African Archaeological Bulletin* 57: 15–30.

Hays-Gilpin, K., A. Deegan and E. Morris 1992. *Prehistoric sandals from northeastern Arizona: the Earl H. Morris and Ann Axtell Morris research.* Anthropological papers of the University of Arizona 62, University of Arizona Press, Tuscon.

Hayward, J. A. 2016. Reading the signs: depictions of people and things in the rock art of Mirarr Country, Northern Territory, Australia. Unpubl. PhD thesis, Department of Archaeology and Anthropology, School of Arts and Social Sciences, The Australian National University, Canberra.

Jones, R. 1985. *Archaeological research in Kakadu National Park*. Special Publication 13, Australian Parks and Wildlife Service, Canberra.

Jones, P. 2005. Bartering for baskets. In L. Hamby (ed.), *Twined together: Kunmadj Njalehnjaleken*. Injalak Arts and Crafts, Gunbalanya.

Jones, A.M. and M. Díaz-Guardamino 2017. Enigmatic images from remote prehistory. In B. David and I. J. McNiven (eds), *The Oxford handbook of the archaeology and anthropology of rock art*. Oxford University Press, Oxford. DOI:10.1093/oxfordhb/9780190607357.013.52.

Kamminga, J. and H. Allen 1973. *Alligator Rivers Environmental Fact-Finding Study: report of the archaeological survey*. Government Printer, Darwin.

Kuchler, S. 1999. Binding in the Pacific: between loops and knots. *Oceania 69*(3): 145–156.

Lee, G. 1992. *Rock art of Easter Island: symbols of power, prayers to the gods*. Institute of Archaeology University of California, Los Angeles.

Lewis, D. 1988. *The rock paintings of Arnhem Land: social, ecological, and material culture change in the Post-Glacial period.* B.A.R., Oxford.

Lewis-Williams, J. D. 1987. A dream of eland: an unexplored component of San shamanism and rock art. *World Archaeology* 19(2): 165–177.

Lewis-Williams, J. D. and D. G Pearce 2012. Framed idiosyncrasy: method and evidence in the interpretation of San rock art. *The South African Archaeological Bulletin* 67: 75–87.

MacKenzie, M. A. 1991. *Androgynous objects: string bags and gender in central New Guinea*. Harwood Academic Publishers, Switzerland.

Mason, O. T., 1904. *Aboriginal American basketry: studies in a textile art without machinery*. Government Printing Office, Washington.

May, S. K. and A. Murphy 2005. Some Baskets are Special Ones. In L. Hamby (ed) *Twined Together: Kunmadj Njalehnjaleken*, pp.19-28. Gunbalanya: Injalak Arts and Crafts.

May, S.K. and I. Domingo Sanz 2010. Making sense of scenes. *Rock Art Research* 27(1): 35–42.

May, S. K., J. G. Malarngurra, I. G. Johnston, J. Goldhahn, J. Lee, G. O'Loughlin, K. May, C. N. Nabobbob, M. Garde and P. S. C. Taçon 2019. 'This is my father's painting': a first-hand account of the creation of the most iconic rock art in Kakadu National Park. *Rock Art Research* 36(2): 199–213.

May, S. K., J. Huntley, M. Marshall, E. Miller, J. A. Hayward, A. Jalandoni, J. Goldhahn, I. G. Johnston, J. Lee, G. O'Loughlin, K. May, I. Domingo Sanz & P. S. C. Taçon 2020. New insights into the rock art of Anbangbang Gallery, Kakadu National Park. *Journal of Field Archaeology* 45(2): 120–134.

Maloney, T., S. O'Connor, R. Wood, K. Aplin and J. Balme 2018. Carpenters Gap 1: A 47,000 year old record of indigenous adaption and innovation. *Quaternary Science Reviews* 191: 204–228.

McCall, G. S. 2010. Changing views of Drakensberg San rock art: examining landscape use, ritual activity, and contact through multivariate content-based spatial analysis. *American Antiquity 75*(4): 773–791.

Miller, E. 2016. The case for baskets: rock paintings of bags and baskets in western Arnhem Land, Australia. Unpubl. honours thesis, Australian National University.

Mountford, C. P. 1956. *Records* of the American-Australian Scientific Expedition to Arnhem Land (Vol. 1). Melbourne University Press.

Neumayer, E. 2013. *Prehistoric rock art of India*. Oxford University Press India, New Delhi.

Niemeyer Fernández, H. and D. Ballereau 2004. Arte rupestre del río Grande, cuenca del río Limarí, Norte Chico, Chile. *Chungará (Arica)* 36(1): 37–101.

Nihildas, N. 2014. A micro-regional approach to the rock art sites in the Anjunad Valley, south central Kerala. *Heritage: Journal of Multidisciplinary Studies in Archaeology* 2: 593–624.

Parkington, J. and A. Manhire 2003. The domestic context of fine line rock paintings in the Western Cape, South Africa. *Kronos* 29: 30–46.

Saidin, M. and P. S. Taçon 2011. The recent rock drawings of the Lenggong Valley, Perak, Malaysia. *Antiquity* 85(328): 459–475.

Schaafsma, P. 2016. Sandals as icons: representations in ancestral Pueblo rock art and effigies in stone and wood. *Arts* 5(4): article number 7.

Schoonraad, M. 1965. Waterbags in rock-art: reconsidered. *The South African Archaeological Bulletin* 20(78): 89–90.

Schrire, C. 1982. *The Alligator Rivers: prehistory and ecology in western Arnhem Land*. Terra Australis 7, Australian National University, Canberra.

Schwarz, M. T. 1997. *Molded in the image of changing woman: Navajo views on the human body and personhood*. University of Arizona Press, Tuscon.

Sepúlveda, M. A. 2011. Arte rupestre y complejidad social durante el período Intermedio Tardío en la subregión del Río Salado (Norte de Chile). *Chungará (Arica)* 43(1): 53–72.

Soffer, O., J. M. Adovasio, D. C. Hyland, M. D. Gvozdover, J. Habu, J. K. Kozlowski, L. R. McDermott, M. Mussi, L. R. Owen, J. Svoboda and J. Zilhão 2000. The 'Venus' figurines: textiles, basketry, gender, and status in the Upper Paleolithic. *Current Anthropology* 41(4): 511–537.

Sundstrom, L. 1989. Archaic hunting practices depicted in a northwestern Plains rock art style. *Plains Anthropologist* 34(124): 147–169.

Spencer, W. B. 1914. *Native tribes of the Northern Territory of Australia*. Macmillon, London.

Summers, R. 1959. *Prehistoric rock art of the Federation of Rhodesia and Nyasaland*. National Publications Trust, Rhodesia and Nyasaland.

Taylor, L. 1996. *Seeing the inside: bark painting in western Arnhem Land*. Oxford University Press, Oxford.

Taçon, P. S. C. 1989a. Art and the essence of being: symbolic and economic aspects of fish among the peoples of western Arnhem Land, Australia. In H. Morphy (ed.), *Animals into art*, pp. 237–250. One World Archaeology 7, Unwin Hyman, Boston, MA.

Taçon, P. S. C. 1989b. From Rainbow Snakes to 'x-ray' fish: the nature of the recent rock painting tradition of western Arnhem Land, Australia. Unpubl. PhD thesis, Australian National University, Canberra.

Taçon, P. S. 2019. Connecting to the ancestors: why rock art is important for indigenous Australians and their well-being. *Rock Art Research* 36(1): 5–14.

Taçon, P. S. C. and C. Chippindale 1998. An archaeology of rock-art through informed methods and formal methods. In C. Chippindale and P. S. C. Taçon (eds), *The archaeology of rock-art*, pp. 1–10. Cambridge University Press, Cambridge.

Thomson, D. F. 1961. Marrngitmirri and Kalka-medicineman and sorcerer in Arnhem Land. *Man* 61: 97–102.

Veth, P., C. Myers, P. Heaney and S. Ouzman 2018. Plants before farming: the deep history of plant-use and representation in the rock art of Australia's Kimberley region. *Quaternary International* 489: 26–45.

Viestad, V. M. 2018. *Dress as social relations: an interpretation of Bushman dress*. Wits University Press, Johannesburg.

Vilches, F. and G. Cabello 2011. Variaciones sobre un mismo tema: el arte rupestre asociado al complejo Pica-Tarapacá, norte de Chile. *Chungará (Arica)* 43(1): 37–52.

Warner, W. L. 1958. *A black civilization.* Harper and Brothers, New York.

Welch, D. M. 1997. Fight or dance? Ceremony and the spearthrower in northern Australian rock art. *Rock Art Research* 14: 88–112.

Wendrich, W. 1991. *Who is afraid of basketry: a guide to recording basketry and cordage for archaeologists and ethnographers*. Centre for Non-Western Studies Leiden University, The Netherlands.

Williams, D. 1985. Petroglyphs in the prehistory of northern Amazonia and the Antilles. In F. Wendorf and A. E. Close (eds), *Advances in World Archaeology* 4: 335–387. Academic Press, New York.

Yates, R., J. Golson and M. Hall 1985. Trance performance: the rock art of Boontjieskloof and Sevilla. *The South African Archaeological Bulletin* 40: 70–80.

RAR 38-1347